THE MEDICAL JOURNAL OF AUSTRALIA

VOL. II.—36TH YEAR. SYDNEY, SATURDAY, JULY 23, 1949. No. 4.

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CONTROL OF HYPERTHYREOIDISM BY PROPYL THIOURACIL: A CLINICAL INQUIRY.

By KEMPSON MADDOX,
Sydney.

DISADVANTAGES of thiouracil therapy are limited almost entirely to the untoward side-effects which are encountered in a significant percentage of cases. Minor reactions comprise urticaria, erythema, papules, morbilliform eruptions, nausea, vomiting, drug fever, œdema, lymphadenopathy, salivary gland enlargement. Major and dangerous sequelæ are leucopenia and neutropenia. Hepatitis has been reported once, but there is room for doubt as to whether the drug was responsible. Reactions to thiouracil occur in approximately 13% of patients taking this compound. In one series 27 of 781 patients (3·4%) developed leucopenia (3000 white cells per cubic millimetre or less), and in 19 of 1091 patients agranulocytosis occurred. Of these 19, one-quarter died. After resumption of the drug or a subsequent bacterial infection agranulocytosis usually recurs. Twenty-one deaths from agranulocytosis had been reported by 1946. In a search for safer and more active compounds, Astwood tested thiourea derivatives, thiobarbital, 6 methyl thiouracil and 6 N propyl thiouracil among others. Experiments with rats indicated that both methyl thiouracil and propyl thiouracil were more active and safer than thiouracil itself. Propyl thiouracil exhibited three times the therapeutic activity of methyl thiouracil with fewer toxic reactions, and was eleven times more active in the rat than thiouracil. This encouraging relationship was not wholly maintained during trial on man, but the ratio of therapeutic activity has remained about three times as great in favour of propyl thiouracil. Patients have been reported in whom thiouracil had produced toxic effects, but who could tolerate propyl thiouracil without difficulty. After the transfer of patients already controlled by thiouracil to propyl thiouracil it was reported that it was necessary to give at least 32 milligrammes of the latter to maintain the benefit bestowed by 100 milligrammes of the former. At first the recommended dose of propyl thiouracil was 50 to 150 milligrammes per day, but latterly the range preferred by most writers has varied from 200 to 300 milligrammes *per diem*. In the last 150 patients treated by Astwood with the lower dosage range over a period of fifteen months not a single untoward reaction occurred. He prophesied, however, that the same reactions as occur with other members of the closed ring thiourylene series would be encountered with increasing application of the drug. A number of papers have appeared in the American literature during the last two years which prove this fact and together give an adequate commentary upon the value of this preparation. Crile treated 218 patients with a dosage of 200 to 300 milligrammes daily. Exfoliative dermatitis with recovery was observed in one case. Grauer, de Welt and Elkin treated 37 patients, 8·1% of whom developed urticaria as a sole toxic manifestation. Beierwaltes and Sturgis gave 150 milligrammes of propyl thiouracil to 42 patients. Taylor reported no agranulocytosis in 26 patients so treated; Jackson treated 150 patients with impunity. Before the drug appeared on the American market (by April, 1947), over 2000 patients had been treated by propyl thiouracil. Hibbs and McCullagh actually discontinued weekly checks on the blood count, after an experience of 218 patients treated without any sign of marrow failure. They employed up to 1000 milligrammes daily and state that a dose of 300 milligrammes produced no more toxic effects than smaller doses. Bartels has prepared over 1100 patients for operation with antithyreoid drugs—672 with propyl thiouracil. These latter patients reacted adversely in 1·9% instances; in seven patients the total leucocyte count fell sharply, and in three agranulocytosis appeared. Bartels states that reactions of all types occur in 2% of

patients given propyl thiouracil and that granulopenia may be anticipated in 0·4% of cases.

Early in 1947, before propyl thiouracil was available generally, I received a gift of several thousand tablets of propyl thiouracil ("Probacil") through the kindness of Dr. Stanton Hardy, of the Lederle Laboratories, Pearl River, New York, for trial in Sydney. The drug in early consignments was prepared in tablets of 25 milligrammes, but this was soon afterwards changed to a content of 50 milligrammes per tablet. In April, 1947,

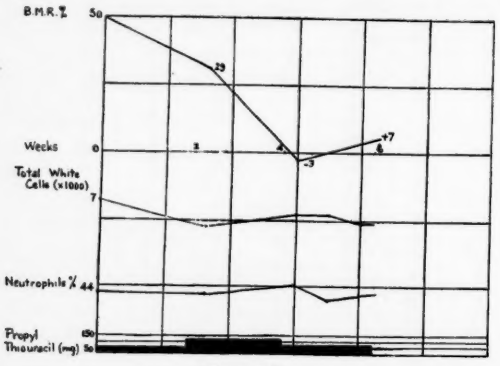

FIGURE I.

Case V: A thyreocardiac prepared for operation. Note sudden fall in neutrophile cells at fifth week without fall in total number of leucocytes.

I began to treat consecutive patients from private and hospital practice with propyl thiouracil as a definitive or total type of medical treatment in an attempt to answer the following questions: (i) Is the drug as effective and as rapid in action as its predecessors in the thiocarbamide series? (ii) Can patients remain at work and ambulant during treatment? (iii) What is the incidence and nature of toxic reactions? (iv) Will the drug "cure" hyperthyreoidism in certain cases? If not, what is the optimum period of treatment and the incidence of relapse? (v) How frequently should blood counts be performed? Is laboratory control essential?

From April, 1947, to October, 1948, I treated 34 patients—32 females and two males. Seven were submitted to surgery, for reasons stated later. The remainder have been treated solely by propyl thiouracil, with bed rest, phenobarbital and occasionally dried thyreoid extract as adjuvant therapy in some cases. None have received Lugol's

TABLE I.

Age of Patient and Type of Goitre (34 Patients, 32 Females, 2 Males).

Age Group.	Number of Patients.	Type of Goitre.		
		Diffuse.	Nodular.	Recurrent.
Under 30 years	9	8	1	—
30 to 50 years	15	11	2	2
50 to 74 years	10	6	3	1
Total	34	25	6	3

solution except those who underwent thyreoidectomy. The ages of the patients extended from twenty to seventy-four years, one-third being under the age of thirty years. The goitre was classed as diffuse in 20 cases and as an adenoma in 10, and three patients had had a previous subtotal thyreoidectomy. It is often difficult to make an exact distinction, as many diffuse goitres are asymmetrical and of varying consistency. Most writers have observed no difference in response between the two clinical types, but Poate states that toxic adenomatous goitres do not respond satisfactorily to this form of treatment and advises surgical treatment. Crile, however, does not share the fear of cancer if a nodular goitre is left in place, as malignant disease is rarely present in patients with hyperthyreoidism. He agrees that a large nodular goitre must nevertheless be watched carefully. I am inclined to agree with Poate, not only because surgery excludes the risk of cancer but also because it minimizes insidious cardiac damage, which occurs from the strong tendency to recurrence of activity in this type of goitre after medical treatment.

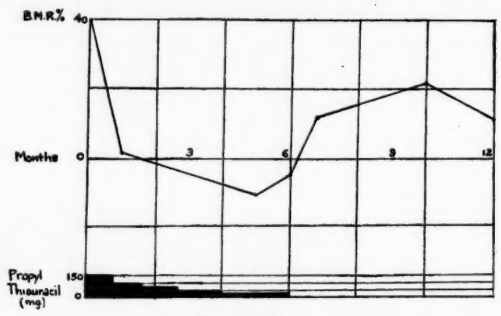

FIGURE II.

Case I: Showing response to small doses of propyl thiouracil, but mild relapse because of too short duration of treatment.

I made no attempt to dissuade patients from an operation if their own doctor or the patient desired it or if the patient's progress under propyl thiouracil was unsatisfactory. Actually seven patients were submitted to partial thyreoidectomy, two because they developed an anxiety state in respect of their illness, two because their homes were remote from any medical laboratory, two because as much as 300 milligrammes of propyl thiouracil a day was required to control their metabolism, and one because even 350 milligrammes failed during pregnancy to reduce the basal metabolic rate to a normal level.

Results.

In the remaining 27 cases the drug successfully inhibited the elaboration of excess thyreoid hormone. Ten of these patients are still on a maintenance dose and 17 are in apparent remission. Remissions have so far lasted for from three to six months in two cases, from six to twelve months in six, and for twelve months or more in nine. Among the ten patients still under treatment are four who ceased taking the drug after intervals varying

TABLE II.[1]

Time Required for Full Antithyreoid Effects on Basal Metabolic Rates and Clinical Signs.

Initial Dose. (Milligrammes.)	Time for Stabilization. (Days.)
50 to 100	57
100 to 150	25
200 to 300	29

[1] Four patients with unusually high resistance are omitted. They averaged 109 days to stabilization. Three were operated upon.

from three to eight months, but who relapsed within one month and have recommenced the therapy. Two of these will probably be referred for surgery in the near future, as one has a large nodular goitre and an eye with a grade III proptosis (in a grading of I to IV). She seems to require 150 milligrammes a day for the maintenance of the clinical norm, while the other patient is a thyreocardiac. For the present purpose a remission has been taken to indicate a patient in good subjective health, free from any of the clinical symptoms of hyperthyreoidism,

TABLE III.[1]
Relapses.

Case Number.	Initial Basal Metabolic Rate.	Initial Daily Dose. (Milligrammes.)	Maintenance Daily Dose. (Milligrammes.)	Duration of Treatment.	Interval from Treatment to Relapse.
I	+41%	50	50	4 weeks.	1 week.
II	+33%	50	50 to 100	5 months.	5 months.
III	+15%	100	100	10 months.	2 months.
IV	+23%	100	20 to 75	4 months.	3 months.
V	+46%	150	150	2 months.	1 month.
VI	+32%	150	75	3 months.	Under one month.

[1] Small doses and short courses of treatment favour early relapse.

with a normal pulse rate and pulse pressure, no tremor, a dry skin, normal menses, satisfactory nutrition, and a basal metabolic rate within 10% on either side of zero. Many goitres of the diffuse parenchymatous type have been replaced by glands of normal size, shape and consistency. In some cases both or one of the eyes have returned to normal; in others some prominence remains. All patients

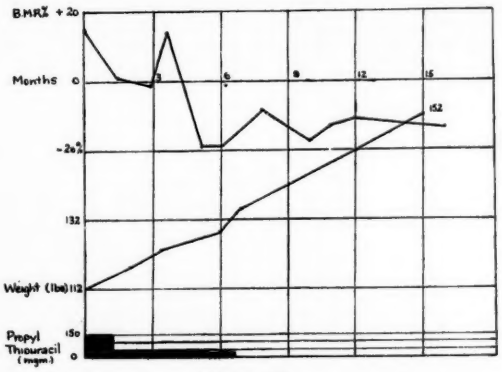

FIGURE III.

Case XI: Hyperthyreoidism with large diffuse goitre; excessive weight gain during period of induced subthyreoidism.

have gained in weight, some to an embarrassing degree (29 pounds to 40 pounds), but more usually from 7 to 14 pounds) (Figure III). When the goitre has remained very large and firm, in spite of clinical recovery, dried thyreoid extract, one-quarter of a grain twice daily, has been given in addition (three cases), and this appeared to accelerate a diminution in the gland size. Most of the female patients suffered from disturbance of the menstrual cycle, with prompt reversion to normal a month or two after treatment.

Dosage.

The first treatment was given to a bed patient under the care of Dr. L. H. Hughes in January, 1947. The optimum dosage was not known at this time. Fifty

TABLE IV.
Dosage.

Dosage.	Under 100 Milligrammes.	100 to 100 Milligrammes.	200 to 350 Milligrammes.
Initial dosage	7 cases	17 cases	10 cases
Maintenance dosage ..	22 cases	9 cases	2 cases

milligrammes was considered a safe quantity, although I had already seen Dr. Elliott Newman, of Johns Hopkins Hospital, employ 150 milligrammes.

The present patient was given 50 milligrammes a day, which reduced her basal metabolic rate from +34% to +3% in three weeks (Figure II). Administration of the drug was then discontinued because of a skin rash. In two months her basal metabolic rate had risen again to +41%. Her second course consisted of 150 milligrammes a day and she was normal again in two weeks.

It is thus possible to obtain good results with small doses of 50 to 100 milligrammes per day, particularly in patients at rest, but most workers now recommend 200 to 300 milligrammes daily. Evidences of toxicity appear in sensitive subjects whether the dose is small or large; I now use the larger dosage scale and would recommend 300 to 350 milligrammes for patients with a long history or large goitres (especially with multiple adenomata), for thyreocardiac or other severely ill patients, and in pregnancy. In Table IV it will be seen that 14 patients (the earlier ones) received 150 milligrammes a day or less as an initial dose, whereas those in the latter half of the series were given the larger range.

TABLE V.
Results.

Status of Patients.	Type of Goitre.			Total.
	Parenchymatous.	Adenomatous.	Recurrent.	
"Cured"	9	6	2	17
Operated upon	6	1	—	7
Remaining under treatment (October, 1948) ..	9	1	—	10

Specific results were observed in two to three weeks. Subjective preceded objective improvement. Sweating and tachycardia were the first signs to disappear, together with reversal of weight loss and increase in energy; tremor and the eye signs were the last to go. The pulse rate seemed frequently to fall to 90 to 100 per minute and remain at this level for some weeks before a second fall to 70 to 80 per minute occurred. As with thiouracil

TABLE VI.
Drug Sensitivity (14 of 34 Cases).

Abnormal Condition.	Number of Cases.	
Leucopenia (white cells under 4000 per cubic millimetre)	4	occurred together only twice; 8 patients affected.
Neutropenia (neutrophile cells under 40%)	6	
Agranulocytosis	0	
Salivary gland enlargement	2	
Minor rashes	8	accompanied relative neutropenia (under 40% neutrophile cells in five of eight cases).
Fever	1	
Paræsthesiæ	1	

treatment, the gland enlarges and becomes firm during the initial therapy and does not become wholly soft until the patient is in full remission. The bruit may remain for a long period. If there is no subjective or objective improvement by this time, either the preparation is inactive or not absorbed or the diagnosis is in error. There are many exceptions to the rule that the basal metabolic rate will

TABLE VII.
Summary of Cases.

Case Number; Age (Years) and Sex. of Patient.	Initial Basal Metabolic Rate.	Type of Goitre.	Duration of Toxæmia.	Patient in Bed or Ambulatory.	Initial Dose of Propyl Thiouracil. (Milligrammes.)	Maintenance Dose. (Milligrammes.)	Approximate Time to Stabilization.	Reaction, Type and Time.	Total Duration of Therapy.	Time of Observation Since Cessation of Drug.	Total Fall in Basal Metabolic Rate.	Total Weight Gain. (Pounds)	Remarks.
1. M.H., 37, F.	+41%	Diffuse, parenchymatous.	2 years.	Ambulatory.	150	25	20 days.	Papular rash after 30 days.	5 months.	17 months.	50%	0	First patient treated with 50 milligrammes, which brought basal metabolic rate to normal in one month (see text).
2. J.B., 34, F.	+33%	Diffuse parenchymatous.	1 year.	Ambulatory.	50, increased to 150 over 3 months.	50	70 days.	Nil.	5 months.	16 months.	39%	24	Diabetic (see text).
3. M.B., 51, F.	+15%	Diffuse parenchymatous.	6 months.	Both.	100	75	28 days.	Headache, nausea, occasionally.	12 months.	—	36%	4	Unable to stop drug. Submitted to thyreoidectomy.
4. L.A., 29, F.	+25%	Diffuse parenchymatous.	6 months.	Ambulatory.	50	25	75 days.	Nausea, two days.	6 months.	13 months.	43%	10	——
5. E.F.M., 61, F.	+50%	Diffuse parenchymatous.	2 years.	Bed.	125	50	28 days.	Neutropenia.	6 weeks.	16 months.	53%	6 in six weeks.	Thyreoidectomy after six weeks; patient's home remote.
6. E.S., 56, M.	+28%	Adenomatous.	6 months.	Both.	150	50	26 days.	Slight urticaria on palms. Neutropenia.	6 months.	12 months.	34%	14	Salivary glands enlarged after six months, patient discontinued drug himself.
7. I.N., 45, F.	+23%	Nodular.	6 months.	Ambulatory.	100	50	28 days.	Nil.	10 months.	3 months.	36%	10	Developed mild transient diabetes during relapse (see text).
8. P.H., 32, F.	+19%	None.	5 months.	Ambulatory.	150	50	25 days.	Punctate rash on trunk.	6 months.	0	10%	6	Exophthalmos and tachycardia with high pulse pressure, but basal metabolic rate only +19%.
9. L.T., 24, F.	+39%	Diffuse, parenchymatous.	6 months.	Ambulatory.	150	25 to 50	34 days.	Neutropenia.	6 months.	15 months.	48%	13	Asthma.
10. H.E., 25, F.	+28%	Diffuse, parenchymatous.	2 months.	Ambulatory.	150	25 to 50	16 days.	Nil.	4 months.	7 months.	44%	12	——
11. J.W., 27, F.	+15%	Diffuse parenchymatous.	6 months.	Both.	150	25 to 50	16 days.	Leucopenia, rash.	5 months.	10 months.	34%	40	Note weight increase.
12. F.E.J., 71, F.	+31%	Diffuse parenchymatous.	3 months.	Both.	150	50	21 days.	Nil.	3 months.	14 months.	33%	4	Arthritis, pyelitis.
13. J.E., 28, F.	+33%	Adenoma of isthmus.	1 year.	Ambulatory.	75	50	49 days.	Neutropenia.	3 months.	12 months.	51%	2	Adenoma disappeared.
14. M.D., 40, F.	+46%	Recurrent thyreotoxicosis; no goitre.	1 year.	Both.	150 to 250	50	150 days.	Swelling of salivary glands and tongue.	8 months.	6 months.	62%	18	Very resistant.
15. A.W., 28, F.	+80%	Diffuse parenchymatous.	3 months.	Both.	200	300	Never achieved.	Nil.	3 months.	13 months.	50%	6	Pregnant, thyreoidectomy (see text).
16. M.H., 20, F.	+40%	Diffuse parenchymatous.	4 months.	Ambulatory.	200	25 to 50	40 days.	Nil.	5 months.	14 months.	54%	14	Weight later fell by nine pounds.
17. M.R., 52, F.	+16%	Recurrent nodule.	6 months.	Bed.	200	75	26 days.	Nil.	3 months.	10 months.	18%	7	——
18. M.C., 41, F.	+65%	Adenoma.	4 months.	Ambulatory.	250	50	46 days.	Rash.	6 months	8 months	62%	8	Subsequent thyreoidectomy without trouble.
19. I.M., 35, F.	+39%	Diffuse parenchymatous.	12 months.	Ambulatory.	150, later 350	—	23 days.	Leucopenia.	3 months.	12 months.	36%	3	Very resistant. Thyreoidectomy performed.

19. I.M.,	35, F.	+39%	Diffuse parenchymatous.	12 months.	Ambulatory.	150, later 350	—	23 days.	Leucopenia.	3 months.	12 months.	30%	3	Very resistant. Thyroidectomy performed.

TABLE VII. *Continued.*

Summary of Cases. Continued

Case Number; Age (Years) and Sex of Patient.	Initial Basal Metabolic Rate.	Type of Goitre.	Duration of Toxæmia.	Patient in Bed or Ambulatory.	Initial Dose of Propyl Thiouracil. (Milligrammes.)	Maintenance Dose. (Milligrammes.)	Approximate Time to Stabilization.	Reaction, Type and Time.	Total Duration of Therapy.	Time of Observation Since Cessation of Drug.	Total Fall in Basal Metabolic Rate.	Total Weight Gain. (Pounds)	Remarks.
20. P.K., 35, F.	+28%	Diffuse parenchymatous.	4 months.	Ambulatory.	150	50	35 days.	Nil.	6 months.	8 months.	32%	16	——
21. M.E., 74, F.	+50%	Diffuse nodular.	3 years.	Both.	300	100	24 days.	None.	1 year.	—	69%	18	Thyreocardiac; still under maintenance therapy.
22. M.L., 23, F.	+20%	Diffuse parenchymatous.	6 weeks.	Both.	250	150	14 days.	None.	3 months.	9 months.	40%	7	Schizophrenic.
23. R.M., 37, F.	+64%	Diffuse parenchymatous.	3 months.	Both.	250 to 300	300	11 weeks.	None.	3 months.	7 months.	80%	10	Thyreoidectomy.
24. A.H., 55, F.	+50%	Diffuse parenchymatous.	3 months.	Both.	300	75	7 weeks.	Burning feeling in one foot.	11 months.	11 months.	68%	29	Still under treatment.
25. D.R., 36, F.	+32%	Adenomatous.	3 months.	Ambulatory.	150 to 200	75	3 months.	Leucopenia.	6 months.	2 months.	48%	11	Thyreoidectomy.
26. P.J.B., 50, F.	+60%	Diffuse parenchymatous.	4 months.	Ambulatory.	300	50	1 month.	None.	7 months.	—	60%	21	Still under treatment.
27. E.T., 49, F.	+22%	Diffuse parenchymatous.	3 months.	Ambulatory.	200	150	7 weeks.	None.	7 months.	—	42%	8	Malignant exophthalmos. Still under treatment.
28. J.L., 22, F.	+44%	Diffuse parenchymatous.	2 months.	Both.	300	50	18 days.	None.	6 months.	—	33%	11	Still under treatment.
29. E.H., 40, F.	+50%	Diffuse parenchymatous.	3 years.	Both.	300	100	4 weeks.	None.	2 months.	4 months.	48%	8	Thyreoidectomy
30 C.A.W., 49, F.	+37%	Simple parenchymatous.	18 months.	Ambulatory.	300	100	4 weeks.	None.	3 months.	—	59%	6	Still under treatment.
31. A.C., 38, F.	+98%	Diffuse parenchymatous	6 months.	Both.	200	100	6 weeks.	Œdema of legs. Urticaria	2·5 months	—	36%	7	Still under treatment
32 L.H., 60, F	+18%	Diffuse parenchymatous.	12 months	Both.	200	100	21 days.	None.	3 months.	—	15%	7	Still under treatment.
33. U.L., 29, F.	+31%	Diffuse parenchymatous.	5 months.	Ambulatory.	200	100	21 days.	Papulo-vesicular urticaria.	3 months.	—	30%	5	Still under treatment.
34. D.W., 40, M.	+27%	Diffuse parenchymatous. Large.	6 months.	Ambulatory.	200	100 to 200	5 weeks.	None.	2 months.	—	20%	5	Still under treatment.

fall by 1% per day, but this forms a rough guide, and the more toxic the patient's condition, the longer the time required for stabilization. Worry, tobacco, caffeine and overwork all delay stabilization, and there is no doubt that rest in bed accelerates the fall in the basal metabolic rate. The drug may be given in two or three divided amounts during the day or all at once. Nausea and vomiting are probably due to hypersensitivity and may presage further side-effects, rather than due to local gastric irritation.

With the patient fully under the control of the drug (that is, showing no clinical signs of toxæmia and having a basal metabolic rate at or below normal), the question remains as to how long and at what dosage the therapy should continue. Opinions vary from six to twelve months. Indications for prolonged medication (eight to twelve months or longer) are high initial toxicity, large long-standing goitres, a slow fall in the basal metabolic rate (or if the basal metabolic rate "sticks" at about +20%), the presence of complications such as heart disease, psychosis *et cetera* and the necessity for a maintenance dose of over 100 milligrammes per day. There are many individual differences, however, and it is impossible always to predict which patient will show a relative resistance to the drug. I encountered no instances of "propyl thiouracil fastness", but there were some patients who showed a relative resistance (Figure VI). Such patients must be considered carefully from the surgical standpoint, as the patience of the physician (and of the patient too) may wear thin if frequent clinical and laboratory care is to continue indefinitely.

The magnitude of the maintenance dose will therefore vary from 50 to 150 milligrammes. It is probably of little value to consider dosages under 50 milligrammes per day. If a patient with a mild or moderate hyperthyreoidism has had six to eight months of treatment and there are none of the

above-mentioned indications to prolong therapy, a weaning process by which the drug is reduced by 50 milligrammes per month may be essayed. It is repeated here that the time for stabilization and the size of the maintenance dose must be considered individually.

In the present series patients have been followed up[1] for these periods: three months, one patient; six months, eight patients; twelve months, eight patients.

Toxic Effects.

The toxic effects are the same as occur with other members of the thiourea series, and consist of skin rashes (erythematous, papular, morbilliform, urticarial), swelling of the salivary glands, œdema, fever and bone marrow depression (leucopenia with or without neutropenia and *vice versa*, agranulocytosis) (Table VI). No instance of agranulocytosis was observed in this small series, but this may have been fortunate. Bartels recalls his first experience with thiouracil; he treated 45 patients without difficulty, but among the next ten patients treated agranulocytosis occurred three times. Differential white cell counts were made as often as possible, at intervals of never longer than one month for out-patients and of one week for in-patients. An endeavour was made in all cases to observe the leucocytes every week for the first two months. Bartels encountered three instances of agranulocytosis in 672 patients receiving propyl thiouracil ("Probacil"). All recovered on penicillin therapy. Further single case reports have been furnished by Livingston and by Shibley. These are the only instances of agranulocytosis among over 2000 patients treated to April, 1947, in the United States of America. McCullagh and Hibbs reported no marrow damage in 218 patients treated for an average period of eight months with 300 milligrammes of propyl thiouracil a day.

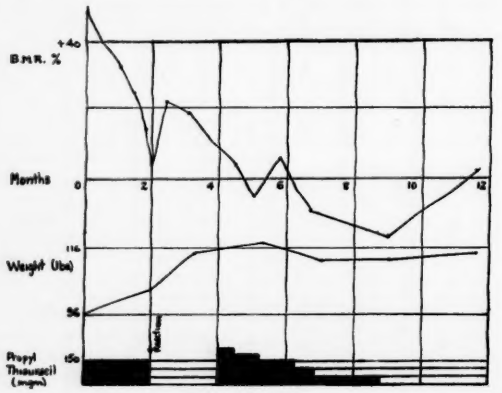

FIGURE IV.

Case XIV: Post-operative recurrence of thyreotoxicosis successfully treated, after development of skin sensitivity, by second course of propyl thiouracil.

Beierwaltes and Sturgis define leucopenia in relation to thiouracil toxicity as a white cell count below 4500 per cubic millimetre and a fall in granulocytes to 45% or less. Moore refers to a white cell level of 3000 per cubic millimetre as his standard danger signal. When the latter figure was applied only one count lower than 3000 per cubic millimetre was observed among the present patients. There were eight white cell counts under 4500 per cubic millimetre. The lowest count was 2000 per cubic millimetre and the next lowest 4000; but in only two of these eight counts did the neutrophile cells constitute under 45% (one 39%, one 41%). However, in six other cases the proportion of neutrophile cells sometimes fell decidedly while the total white cell count was deceptively sustained—for example, 37% of neutrophile cells among 8530 white cells, 38% neutrophile cells in 6150 white cells, 32% leucocytes in 6000 white cells, *et cetera*—which shows the importance of the differential count and the wisdom of enumerating the absolute number of neutrophile cells per unit area of blood (Figure I). With one exception, none of the patients stopped taking the drug when these figures were obtained, and the counts subsequently soon rose, although the patients were thereafter kept under much closer observation (biweekly blood counts). It is not suggested that such a warning should be ignored as a routine procedure, but at this time I was anxious to see what would happen if administration of the drug was continued, and these patients were examined twice a week until the count rose. A warning increase in monocytes, stated to occur by Van Winkle *et alii*, was not observed. No relationship existed between the size of the dose given and the appearance of neutropenia. In some cases the neutrophile cells were under 50% before treatment with propyl thiouracil began, as has been reported in thyreotoxicosis.

The commonest evidence of hypersensitivity was dermatitis. This occurred more frequently on the trunk than on the extremities and spared the face. It was never conspicuous. It often accompanied the relative neutropenia. It was fine and papular in four cases, blotchy or morbilliform in one case, and urticarial in three cases—an incidence of eight patients so affected in 34. All the rashes cleared up within seven days, and in five cases no interruption of the therapy occurred. The others received treatment subsequently without any further skin trouble. One patient's salivary glands enlarged for a few days, and one complained of burning feelings in the feet. Nausea and vomiting occurred three times and one patient lost her appetite for a time. These symptoms may not have been due to the drug.

The average incidence of all reactions in the literature is 1·3%. In this series eight of 34 patients showed transient rashes. This is unusually high and may be due to the fact that all rashes, however evanescent, were included and that the patients were under close observation and had been warned on many occasions to report any type of reaction at once. There are 1384 patients already reported as treated by propyl thiouracil in the literature and including this series. In all, agranulocytosis occurred in five (0·3%).

Coexistence of Hyperthyreoidism and Another Condition.

In this series the following conditions were met with in association with the thyreotoxic state: *diabetes mellitus* (one case), pregnancy (one case), myocardial degeneration (five cases), schizophrenia (one case), malignant exophthalmos (one case).

The diabetic treated was a female patient, aged thirty-four years, who had been a diabetic for nineteen years. At the time of appearance of signs of hyperthyreoidism she was taking a diet of 1600 Calories and a protamine zinc soluble insulin in doses of 100 units *per diem*. Her initial basal metabolic rate was +33%. Treatment began by 75 milligrammes of propyl thiouracil daily, which was increased to 150 milligrammes after seven weeks because of the persistence of clinical evidence of hyperthyreoidism, although her basal metabolic rate had fallen to +14%. This proved sufficient and within three weeks her basal metabolic rate had fallen to −6%, with disappearance of all clinical signs of thyreoid overactivity. She has remained in remission for twenty-four months, but without improvement in her diabetic status.

Allan at the Lahey Clinic has treated 161 patients with hyperthyreoidism and diabetes, and 30 of them have been prepared for surgery by propyl thiouracil. Whereas a two-stage operation was necessary before propyl thiouracil was available, with a mortality rate of 2·3%, all the 30 patients referred to (except one) were operated upon in one stage without fatality. Allan has also found diabetes complicated by hyperthyreoidism to be severe, changeable and difficult to control, as one would expect in a widespread endocrinopathy, and further relapses of hyperthyreoidism may occur in the present patient.

In pregnancy, too, hyperthyreoidism is often rapid in onset and reaches a severe degree. Its beginnings may

[1] At October, 1948.

complicate or mimic *hyperemesis gravidarum*, and an increased liability to toxæmia and abortion occurs. There are reports of the successful control in 22 cases of hyperthyreoidism complicating pregnancy by thiouracil derivatives. From animal experiments cretinizing effects in the fœtus have been feared, and thiouracil is known to be excreted in high concentration in the milk. In the series of 22 patients three goitres were found in their infants, whereas among 16 patients treated surgically at the Mayo Clinic no infantile goitres were observed. Mussey, Haines and Ward have advised iodine preparation and operation up to six weeks before term. "The hyperthyroidism not the pregnancy, must be terminated." (Means.)

The patient to be reported was observed at the Royal Hospital for Women, Sydney, in consultation with Dr. T. Small (Figure V). She was aged twenty-four years and

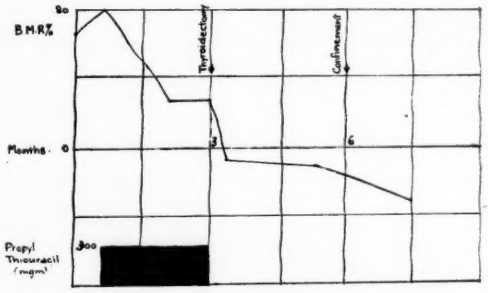

FIGURE V.

Case XV: Pregnancy with thyreotoxicosis; failure to control increased basal metabolic rate with 300 milligrammes of propyl thiouracil per day.

had produced one healthy child four years previously. She was considered to be at about the fourteenth week of pregnancy and had been vomiting practically everything ingested for eight weeks. She had lost 28 pounds in weight in two months. Five days before her admission to hospital she had noticed a swelling in her neck, which rapidly increased in size. She showed obvious signs of weight loss, tachycardia and a firm grade II thyreoid enlargement with a thrill palpable over it. Her hands were tremulous. She was given three litres of 5% glucose in saline by vein, five drops of Lugol's solution three times a day, additional vitamin B_1 and phenobarbital. Four days later acetone had disappeared from her urine and she had ceased vomiting. The basal metabolic rate was estimated at +70%. After a further week the thyreoid swelling was distinctly smaller, the Lugol's solution was suspended and propyl thiouracil was begun in a dosage of 200 milligrammes a day. In ten days she had regained six pounds in body weight since her admission to hospital, but her basal metabolic rate was now +80%. The propyl thiouracil dosage was increased to 300 milligrammes daily. The gland had enlarged again and become much harder. Sixteen days later she felt much better, her pulse rate had fallen to 100 per minute and her basal metabolic rate to +36%. At her own request she was allowed to go home for further rest. A month later signs of hyperthyreoidism had again increased and three drops of Lugol's solution three times a day were added to the thiouracil. Her condition improved again, but as her basal metabolic rate was still +30% and as she was now six months pregnant, she was referred for surgery and subtotal thyreoidectomy was performed.

Examination of the gland showed an absence of colloid in the acini with papillary infolding of the epithelium and yellow areas of degeneration. She remained well until within six weeks of term, when she was delivered of a stillborn fœtus with a true knot in the cord. The fœtus did not appear to be cretinoid, but its thyreoid was enlarged (10 grammes) and very necrotic. When the patient was examined again two months later she exhibited signs of myxœdema (basal metabolic rate −28%).

The lessons available here are the failure of 300 milligrammes of propyl thiouracil adequately to restrain severe thyreotoxicosis in pregnancy, its possible capacity to cause damage to the fœtal thyreoid, and the necessity for the surgeon to leave more than the usual thyreoid remnant after prolonged and high dosage with a thiouracil compound. The results of iodine preparation alone are so satisfactory that I would hesitate to use propyl thiouracil again under such circumstances.

The eight patients with evidence of myocardial degeneration as shown by auricular fibrillation, cardiac dilatation and electrocardiographic abnormalities will form the subject of a separate report. One patient died suddenly, two of them were submitted to thyreoidectomy and the remainder have been kept under satisfactory control with the aid of propyl thiouracil. It is felt, however, that if a thyreocardiac can be brought to a state in which surgery is not unduly risky, and promises a reasonable life expectancy, operation is preferable. This attitude arises from the insidious character of cardiac damage in chronic hyperthyreoidism, which can be opposed only by some radical method of eliminating thyreoid over-activity. Propyl thiouracil is an important drug to the cardiologist, as it offers in the Plummer syndrome more certain means than iodine of controlling the toxæmia until adequate rest, protein restoration and control of arrhythmia have restored the myocardium to a safe status for surgery. Propyl thiouracil may also perform a satisfactory service to those who refuse operation or in whom there are other contraindications. It is probably wise in the treatment of patients with cardiac involvement to keep the basal metabolic rate well on the *minus* side of zero and to examine them frequently.

The fact that hyperthyreoidism can unmask a hidden psychotic tendency is well known.

M.L., aged twenty-one years, was first recognized to have primary hyperthyreoidism of the clinical Graves variety in November, 1947. She was treated by a daily dose of 250 milligrammes of propyl thiouracil, which reduced her basal metabolic rate from +28% to +4% in sixteen days. Although her physical signs were less, her emotionalism became more pronounced, and two months later, while still taking 150 milligrammes of propyl thiouracil per day, she developed fixed delusions and became disorientated. At this time her basal metabolic rate was −8%, her pulse rate was 88 per minute, and she had gained nine pounds in weight. She was removed to a psychiatric institution, and ceased taking the drug after two and a half months' therapy. She was treated by electro-convulsive therapy for a long period without relapse of her hyperthyreoidism, and now a year later appears to be wholly cured of her disabilities.

There appears to be no record of propyl thiouracil producing a toxic psychosis, whereas psychotic changes in advanced hyperthyreoidism are well recognized, and propyl thiouracil has a special role in their control pending thyreoidectomy.

The exhibition of antithyreoid drugs in malignant exophthalmos requires clarification. Thyreoid extract has a reputation for exerting a retarding effect upon this alarming syndrome, when it is seen without or after the cure of hyperthyreoidism. Other forms of treatment, such as pituitary irradiation, exhibition of œstrogen *et cetera*, have also been advocated, with unimpressive results. Of 20 patients recorded by McCullagh *et alii* there were only four whose exophthalmos decreased after thyreoidectomy. In seven it remained the same; in nine it increased. This was independent of the height of the basal metabolic rate before operation. These workers concluded that when malignant exophthalmos was fully established and the eye in danger best results would follow unilateral orbital decompression with electrocauterization of the anterior lobe of the pituitary. In the presence of an assessable degree of hyperthyreoidism and advanced or potential malignant exophthalmos, it seems reasonable to control the factor of hyperthyreoidism by any reliable means, either medical or surgical. That propyl thiouracil will be effective to this degree is illustrated by Case XXVII.

This patient had a unilateral exophthalmos, not merely a pronounced lid retraction as defined by Rundle, with a large adenomatous goitre. The other eye, which was normal, served as a kind of control, as no exophthalmometer was available. This patient presented a classical clinical picture of Graves's disease, with a basal metabolic rate of +22%. After one month's treatment with 200 milligrammes of propyl thiouracil per day, her basal metabolic rate had fallen to +3%, and three weeks later to −20%. By this time her skin and hair were dry, and she looked subthyreoidic. Her proptosed eye, however, was more prominent and watery. She could scarcely close her eyelids. The dosage of the

drug was reduced to 75 milligrammes per day and she was given *Extractum Thyroideum Siccum*, half a grain twice daily. In three weeks her skin was again active and she looked normal; her basal metabolic rate was +28%, but her right eye was even more prominent and limitation of lateral movement was commencing. She continues now on 150 milligrammes of propyl thiouracil ***plus*** the thyreoid extract, and the eye is static but still protruded. The basal metabolic rate at the last two estimations was +6% and +2%. One hopes that if her condition is maintained at this level, her eye will gradually recede, since any further ocular advancement will jeopardize the cornea.

Van Winkle and associates also refer to progressive exophthalmos during thiouracil therapy.

Recurrence of hyperthyreoidism following thyreoidectomy has occurred twice in this series. In one patient the residual thyreoid tissue could be palpated as a firm nodule, in the other it was not discovered either in the neck or in the mediastinum. The latter patient's course is illustrated in Figure IV. She also presented an example of a toxic reaction (rash and enlarged salivary glands), which fortunately did not return after reinstitution of the drug. In the absence of antithyreoid drugs it may have gone badly for her.

In the preparation of patients for surgery with propyl thiouracil I have had little experience. Of the seven patients in this series referred to the surgeon for thyreoidectomy I personally prepared only three for operation. The original plan was followed of bringing the patient's metabolism wholly to normal and then replacing the propyl thiouracil by iodine two weeks prior to operation. This plan was subsequently modified by Bartels, who has prepared 300 patients for operation by propyl thiouracil. He now recommends simultaneous administration of iodine and propyl thiouracil, because severely ill patients are thus brought more promptly under control. He appears to have disproved the assumption that iodine retards the effectiveness of thiouracil compounds. His patients with adenomatous goitre are not given iodine. The original plan has been retained in the treatment of patients with large goitres. All writers agree that the administration of antithyreoid drugs must be continued until the patient's basal metabolic rate has been maintained at or below normal for a period. It is therefore impossible to arrange for the operation after a fixed interval, but preparation can be carried out away from hospital, so that operation can take place almost immediately on the patient's admission, providing a saving of his pocket and of hospital beds. Bartels records no post-operative deaths in his series of 300 patients (66 with complications) prepared with propyl thiouracil, and only one two-stage operation.

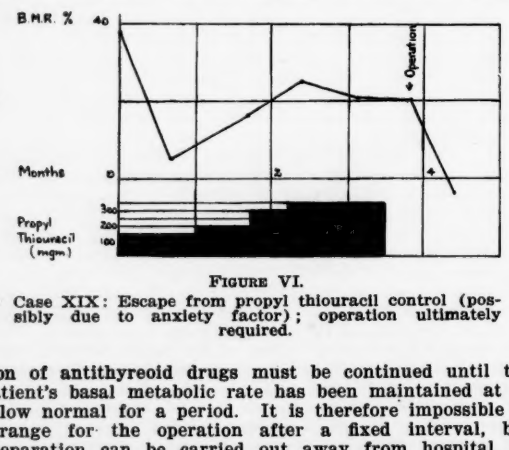

FIGURE VI.

Case XIX: Escape from propyl thiouracil control (possibly due to anxiety factor); operation ultimately required.

Conclusions.

After twenty months' personal observation of 34 patients suffering from various types of hyperthyreoidism the original questions can be answered, within the limitations of the small number of patients treated, as follows.

1. 6 N propyl thiouracil is an active and safe antithyreoid substance. Even in small doses (50 to 100 milligrammes daily) it will in time effectively control thyroxine output to a gratifying degree. The longer the history and the higher the grade of toxæmia, the longer it will take to reduce the basal metabolic rate to normal. A dose of 200 to 300 milligrammes per day is as safe as 50 to 100 milligrammes and will bring the condition of most sufferers under satisfactory control within two to three weeks in a highly specific fashion. Ancillary methods of treatment preserve their importance, and sedatives, physical and mental rest (either relative or absolute), abstention from tobacco and stimulants, a diet rich in proteins and vitamins, *et cetera* are still important aids to recovery.

2. The drug is applicable to hyperthyreoidic individuals with heart disease, diabetes, asthma, pregnancy, psychosis, and recurrent thyreoid toxæmia. In fact, its special value in these instances is that it allows abundant time for preparation for operation and has a gentler action than early surgery, eliminating the risk of post-operative crisis and shock.

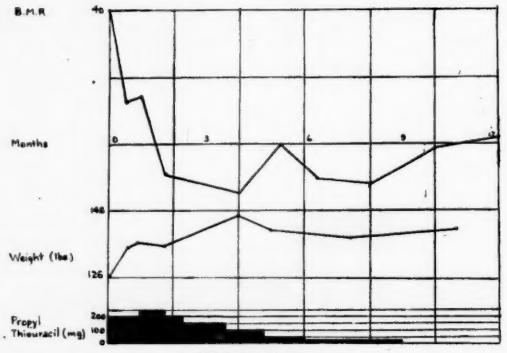

FIGURE VII.

Typical example of satisfactory result in parenchymatous goitre in young women.

3. Apart from agranulocytosis, which was not observed in this series, the minor evidences of hypersensitivity are transient and harmless and do not preclude subsequent continuance with the drug. Such continuance, however, should be a gradual reintroduction of the drug under careful laboratory and hospital observation.

4. No instances of complete resistance to the drug were encountered, but high maintenance doses were required for patients with large adenomatous goitres and in one case of recurrence. Patients requiring a high maintenance dose (100 milligrammes or more daily) can rarely be weaned from propyl thiouracil, and in common with sufferers from coincident heart disease, diabetes, pregnancy, psychosis or agranulocytosis, or from severe reactions, all subjects of adenomatous goitre with or without "iodine-fastness" should be submitted to partial thyreoidectomy, after adequate preparation by propyl thiouracil.

5. The most successful results were in those younger patients with mild to moderate diffuse toxic goitre treated definitively with propyl thiouracil, 17 in number, of whom nine have been in remission for over a year. These patients welcome the possibility of escaping cosmetic damage to their necks, though they risk obesity whether treated by physician or surgeon. With them it seems that a vicious cycle is broken and that normality, once restored, may continue indefinitely. In this respect they seem more permanently "cured" than previous similar patients who had remissions on older medical régimes, such as rest, sedatives, X-ray treatment, solution of psychological problems, iodine administration *et cetera*.

6. For the occasional patient who refuses operation or who has a short life expectancy, who is allergic to iodine or who has recurrent hyperthyreoidism from remote thyreoid tissue, propyl thiouracil is a godsend and its administration may have to be continued indefinitely.

I have no opportunity of essaying a change-over from thiouracil or methyl thiouracil therapy to propyl thio-

uracil therapy, but Beierwaltes and Sturgis, and Reveno state that this can be done readily in a proportion of one unit of propyl thiouracil to three of thiouracil. It is also asserted that drug reactions may not occur with one substance of the series when they have been seen with the other.

Summary.

1. A series of 34 patients of all ages—32 females and two males—suffering from hyperthyreoidism, have been observed during treatment by propyl thiouracil ("Probacil"—Lederle) in various doses and for varying periods of time. No patient failed to respond to the drug and no serious side-effects were observed. Though the incidence of neutropenia was high as compared with other reported series, it produced no clinical harm and soon disappeared.

2. From this experience it is recommended that the initial dose of this drug should be 200 to 300 milligrammes per day and that this must be continued until the basal metabolic rate is at or below normal. At this point the dose can be halved for a further period of observation of one month and thereafter dropped by monthly decrements to a maintenance dose of not less than 75 milligrammes per day. This must be continued, and increased if necessary, for a minimum period of six to eight months before treatment ceases. Relapse usually follows promptly, if it is to occur, but may be delayed up to two months. After six months' remission relapse is unlikely.

Definitive or total treatment by propyl thiouracil is not recommended for adenomatous goitre, for large and long-standing toxic goitre, for thyreocardiac disease, in pregnancy, or when a large maintenance dose (over 100 milligrammes per day) is required, or when adequate laboratory control cannot be sustained. In such cases the use of propyl thiouracil should be limited to the task of preparing the patient for subtotal thyreoidectomy. The surgeon should be advised to leave slightly more gland than when iodine alone is used for preparation, as post-operative myxœdema is twice as severe as that following iodine preparation.

3. Minor skin rashes, salivary gland swellings and drug fever do not necessarily indicate final abandonment of propyl thiouracil therapy, but further doses should be administered under close clinical and laboratory supervision. Transient neutropenia may occur, usually with a slight skin rash, but this rarely leads to serious marrow depression.

4. Propyl thiouracil, with three times the therapeutic potency and ten times the safety of thiouracil or methyl thiouracil, should replace these drugs in the routine management of hyperthyreoidism.

Acknowledgements.

It is a particular pleasure to acknowledge gratefully the assistance of Dr. Stanton M. Hardy, of the Lederle Division of the American Cyaninamid Company, of Dr. Emily Day and colleagues of the staff of the Royal Prince Alfred Hospital, and of Sister Byrne, of the out-patient department of the same hospital.

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POST-GRADUATE TRAINING IN PSYCHIATRY.[1]

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OF recent years, particularly during the war and since, psychiatry has come much more into prominence as an important branch of medical science. The development of psychological and physical methods of treatment has given new hope in the field of mental disorder and has done much to change the gloomy notion of psychiatry as a subject dealing only, or mainly, with the care of the

[1] Read at a meeting of the Australasian Association of Psychiatrists, Melbourne, on October 20, 1948.

chronically insane. Increased public interest is reflected in the stream of "psychological" films to which we are being subjected. Whatever our criticism of these may be, they are certainly having the effect of educating people to the possibilities of doing something about their emotional or mental problems. Hence, our responsibilities as psychiatrists are increasing every day. The Australasian Association of Psychiatrists is a young association, but an important one, as it is the body that will be expected to guide the development of psychiatry in this country. Training activities and research projects are the most important aspects of this, and time is opportune for our members to go into these matters thoroughly and to formulate their ideas and bring them up for discussion. If this short paper opens up the subject for discussion, it will have served its purpose.

Looking at psychiatry from the historical point of view, we see two main lines of development which, in the past at any rate, seemed to have little in common. Firstly, there were the alienists working for the most part in mental hospitals, shut away with their patients from the outside world. These men acquired a great knowledge of psychosis, which remained until recent years a rather isolated body of knowledge, owing to the lag in the therapeutic aspects of the subject. Secondly, there were the psychotherapists, who, for the most part, were general practitioners, physicians and neurologists, whose practices were concerned much more with nearly normal people. These men discovered a wide field for the successful application of psychological methods of treatment. Out of their work has come our knowledge of unconscious mental processes and the psychopathology of neurosis. The two groups of doctors, while being expert in their own spheres, have known little about each other's work. This has led to an unfortunate dichotomy, which is still reflected in the controversies between the advocates of physical methods of therapy and the psychotherapists. So far it seems that physical treatment has been found more successful for psychosis, while psychological treatment has proved best for neurosis. However, it is to be hoped that prejudice will give way to a more scientific attitude to the problem of evaluating the various methods of treatment. This involves a sounder training in scientific method than is at present to be had in courses of study in psychiatry. This is by no means a deficiency in psychiatric education alone. It is, in my opinion, a weakness in medical education generally. It is just as important to know how to test scientifically a theory or method of treatment, as it is to be able to regurgitate facts in an oral examination.

One of the principal aims in psychiatry should be to bring together these two lines of development. This involves the provision of adequate experience in dealing with psychotics as well as neurotics. There are also other branches of psychiatry which should find their place in a training programme, for example, child guidance, mental deficiency and delinquency. The field is now so wide that expert knowledge can hardly be expected in all these branches, but at least the fundamentals of each can be taught. This, together with a well-developed critical faculty, should ensure a good orientation. It is important, also, to be critical of one's own criticism, as this is some safeguard against prejudiced thinking. It is very easy to concoct a "scientific" refutation which is nothing but a rationalization to explain away something we do not like.

There will be general agreement that a sound medical training is a necessary prerequisite to specializing in psychiatry. The subtle personality changes that may accompany cerebral tumour or endocrine dysfunction, the psychotic and neurotic symptoms sometimes seen in uræmia and other toxæmic states, are but a few examples that remind us of the importance of medical knowledge. The relatively new field of research, psychosomatic medicine, also emphasizes this. There is, however, one danger in the pursuit of medical knowledge, and that is that it may be made to do instead of a knowledge of psychopathology. Those of us who feel a little uncertain and uneasy amidst the abstractions of psychopathology are sometimes a little too ready to take flight into the more concrete world of physical medicine. But it can be categorically stated that the most profound knowledge of internal medicine, pharmacology, physiology, pathology or neurology will avail nothing in the understanding or treatment of, for instance, anxiety hysteria.

Diagnosis in psychiatry is an aspect of training which needs careful attention. There is a tendency, today, to discredit the classical diagnosis categories. However, nothing better has yet been suggested to replace them. Whatever their shortcomings, they are still of great clinical value and are indispensable to accurate prognosis and treatment. It is still useful to decide whether a given example of aberrant behaviour has occurred as part of a schizophrenic, manic or psychic-epileptic episode. It is not always easy to pick the melancholic who shows no reduction in psychomotor activity and may even enter the consulting room with beaming countenance. To be able to differentiate between psychotic and neurotic depression makes a big difference in choice of treatment.

It seems to me that the widespread differences of opinion and practice as regards treatment are largely due to laxity in diagnosis. For example, some forms of agitated melancholia may be mistaken for acute anxiety hysteria. Electroconvulsive therapy is administered with good results, and this lends encouragement to its use when the true anxiety hysteria turns up—with, of course, a disappointing outcome. Again, there is the patient who presents obsessional or compulsive symptoms with an underlying, and often less obvious, melancholia or schizophrenia. The obsessional symptoms often disappear dramatically with electroconvulsive therapy. This result often leads to futile attempts to cure obsessional neurosis with similar methods.

With regard to the modern methods of physical treatment, it must be emphasized that they are a relatively new advance in psychiatry, and until recently we have not known in what conditions they were properly applicable; thus their widespread use in all sorts of conditions was scientifically justified from the empirical point of view. But we are rapidly passing out of this phase, and we are now in a much better position to be more discriminating in our use of these methods.

For experience in psychosis there is nothing to compare with receiving-house training. The receiving house is the psychiatric casualty station *par excellence*. In two or three years (and this should be a minimum time to put in) one gets an excellent opportunity to study every conceivable type of psychosis, acute and chronic, functional and organically determined. There is, here, a wealth of research material practically untouched. Nevertheless, the work in a place such as this is somewhat one-sided, as there is little chance of experience in neurosis.

This disadvantage can be offset by work in the psychiatry clinics in general hospitals, where most of the patients present neurotic and psychosomatic problems. The greatly different symptomatology forms a sharp contrast to that seen in a mental hospital. Study in both these branches of psychiatry might well be carried on simultaneously, as it throws into relief the disintegration of ego functions that is such an important feature of psychosis.

While the psychiatric out-patient department offers such good opportunity for learning how to diagnose the various kinds of neurosis, it does practically nothing in the way of offering any opportunity for acquiring technique and skill in psychotherappy. It does, however, give some insight into the possibilities of cooperation with trained psychologists, social workers and occupational therapists. Modern psychometric tests are often helpful in diagnosis and are essential in any scientific attempts to provide vocational guidance. They are also essential in any research work in psychiatry. Tests before and after the various physical methods of treatment should help us to clarify our ideas on these procedures. They may also be used as a check and estimate of fundamental changes occurring during psychotherapy. The well-trained psychiatric social worker can give helpful information about the home and general social environment of patients, particularly in the case of children. In a clinic where we have to deal with a large number of patients and cannot spend as much time with them as we should like, we need to make every possible

use of quick methods of arriving at essential information. It is here that good teamwork is called for and the psychologists and social workers play their important parts. But, the efficient team having been set up, what then? There is no doubt that some patients can be helped along by suitable advice from sympathetic and tolerant people. Some good can be done by the ventilation of petty grievances and by advice to relatives directed towards the elimination of unnecessary irritations and frustrations. But I have yet to see the fundamental structure of a neurosis modified by the most skilful teamwork imaginable. It seems to me that there is no adequate substitute for psychotherapy, which is of necessity time-consuming and must be unhurried. Changes in the psyche of lasting benefit to the patient do not occur overnight, however much we may wish that they would.

Taking the position of psychiatry in Australia today, I think we might fairly say that as regards the physical methods of treatment we are well up to the mark, to judge by the work in other countries. Unfortunately the same cannot be said about psychological methods of treatment. This subject has not yet been taken really seriously in Australia, that is, in any big way. There are small groups of serious workers and scattered individuals who take a keen interest in psychotherapy, but organized work and research in this field are at a minimum. This is probably due to several factors. Historically, psychotherapy is probably following much the same path as it has followed in other countries. It is a science which has had its origin and development in extraacademic circles. Suggestive therapeutics, and particularly hypnosis, have suffered from their "doubtful" origin in the hocus-pocus of mesmerism. Psychoanalysis was indiscreet enough to lay bare the hideous truths of infantile sexuality. Thus these two important branches of psychotherapy have been suspect from the beginning and have had a hard fight to win recognition from those conservative bodies, the universities, upon whose judgement the general acceptance of psychotherapy as a science ultimately depends. Another hindrance in the way of advancement is the lack of funds for training and research. Australian governments are not very generous in their financial support for medical science, least of all for psychiatry. Private endowments are few and far between. Other countries are far better off in this respect than we, and the inevitable result is that Australia lags far behind. Take, for instance, the position of psychoanalysis in Australia. This is a method of treatment and research which has gained wide recognition in Britain, Europe and America; and yet in the Commonwealth we have only one institute recognized by the International Psychoanalytical Association as a training centre for psychoanalysts. The least we might hope for is a training institute in each of the larger cities.

As far as I am aware, only two universities in Australia, namely, those of Melbourne and Sydney, give diplomas in psychological medicine, and they are certainly good as far as they go. That is, they require a good working knowledge of clinical psychiatry and related subjects, psychology, neurology, neuropathology, physiology, psychopathology. But it should be remembered that the possession of a diploma of psychological medicine is no indication of ability or capacity for psychotherapy, any more than the degree of bachelor of surgery indicates excellence as a surgeon. In fact, the analogy is closer than it may seem at first sight. In both surgery and psychotherapy, in the early days, practitioners had to learn their art by a process of experimentation and trial and error. Undoubtedly many mistakes were made but also many excellent techniques were devised. Now the situation is changed. There is organized teaching in surgery, and I understand that an aspiring surgeon not only has to pass theoretical examinations in the subject, but also has to produce evidence of skill in the actual performance of surgical operations before gaining a higher degree in his specialty. This principle is widely recognized as regards surgery, but very few seem to take the same serious view when it comes to psychotherapy. And yet what more onerous task could one undertake than to try to change the workings of a person's mind, to modify his personality and perhaps his character? Psycho-analysts have long recognized the responsibilities of therapists in these matters, and in the training of candidates they insist not only on the candidate's being analysed himself, but also on the necessity for him to undertake the analysis of patients under supervision. The whole course of training takes about four years.

In England and particularly in America it is becoming a more frequent practice for psychiatrists to be analysed as part of a programme to equip themselves fully for the problems with which they have to deal. This seems to be a definite trend, and it will raise the inevitable question whether all psychiatrists should be psychoanalysed. To affirm this without qualification would be, in my opinion, unwarranted. There is any amount of work in psychiatry which does not require such a training. The physical methods of treatment and the more superficial methods of psychotherapy, which have a wide field of application, are cases in point. After all, it is not such a large percentage of the psychiatric population for which psychoanalysis is possible or even necessary. It is important, however, that psychiatrists should be able to select accurately the patients who do need it. But one can be more dogmatic when it comes to therapeutic procedures which seek to modify the dynamics of unconscious mental processes. A personal analysis is necessary for psychiatrists who wish to undertake this work. The same can be said for those who wish to do research in psychopathology. The personal analysis is as indispensable to the psychopathologist as the microscope is to the morbid anatomist. Just as the microscope has revealed a new world beneath the macroscopic, so analysis has discovered a new sphere of mental activity, with its own peculiarities and laws of functioning, otherwise quite inaccessible.

Research in all matters pertaining to mental hygiene is the great need today; much work seems to be going on in America, but how thorough and productive it is only the future will reveal. On all sides there are widely different schools of thought, different theories, different therapeutic techniques, all claiming adherents and brilliant results. While it is only in an atmosphere of complete freedom that any real progress can be made, nevertheless I think there is a real danger that sound scientific principles and knowledge may become obscured in an atmosphere of confusion created by superficial hyperactivity. The various methods of psychotherapy, especially the newer ones, such as hypnoanalysis and group therapy, still need much careful and controlled investigation; a point that is not always realized to the full in these matters is that in any scientific investigation of a psychotherapeutic procedure the therapist is just as important an object of study as his patient. The two must be considered together as a unit. The nearest approach to an investigation of this sort is seen in the analysis carried out under control, when transference and counter-transference phenomena are discussed and analysed with the supervising analyst.

When one considers the profession of psychiatry in its more general aspects, one cannot help but be impressed by the wide field of human activities, to which it can make important contributions. It thus calls for men of the highest integrity and breadth of vision. It is to be hoped that in the future special degree courses will be organized giving a much wider cultural background. In some British universities it is necessary to take a bachelor of arts degree before qualifying in medicine. Something of this kind would be useful for psychiatrists. Problems of sociology and ethnology have an important bearing on the subject of mental hygiene. A psychiatrist needs a good orientation in the peculiarities of his own culture and the ability to compare and contrast it with other cultures, if he is to acquire an understanding of all those subtle environmental factors which, acting as a brake on the fundamental biological impulses, produce in many instances the highest level of intellectual and social development, but also in far too many instances much neurotic and psychotic suffering. To explain this is the kernel of research in psychiatry.

THE INTERNATIONAL CONGRESS ON MENTAL HEALTH.[1]

By ALAN STOLLER,
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FROM August 11 to 21, 1948, I was privileged to attend the International Congress on Mental Health as a representative of the Commonwealth Government. The meeting was held in the Central Hall, Westminster, and was attended by over 2000 members, representing more than 50 countries and every branch of the human sciences. This conference was unique in the amount of preparatory work which had been undertaken, in that for over twelve months 300 groups comprising 5000 social scientists had been collecting material from no fewer than 27 countries; this material had been studied and collated by an International Preparatory Commission which had met for a fortnight prior to the opening of the conference, and the results of their deliberations were issued to members in the form of a 44-page pamphlet, to which emendations were suggested by groups which sat during the period of the congress. I myself was concerned with the section on mental health and national planning and was associated with delegates from such varied countries as Great Britain, the United States of America, France, Holland, Sweden, Finland and Argentine.

The main theme of the Conference on Mental Hygiene was "Mental Health and World Citizenship", whilst two preliminary conferences provided symposia which contributed to the main theme; the first was held under the auspices of the International Committee on Child Psychiatry, on "Aggression", and the second was sponsored by the International Federation for Medical Psychotherapy, the subject being "Guilt". At the same time as the conference was being held, a diorama on mental health planning was shown, the Swiss exhibit being outstanding because of the advanced development of the mental health services of their country; displays of pamphlets and literature were presented by national mental health groups of both England and the United States of America; socio-psychiatric films were shown, and a play dealing with public education on a mental health subject was staged, whilst visits and special meetings were held at outside institutions on such topics as psychosomatic medicine, psychiatric nursing, psychiatric social work, mental hygiene, group psychotherapy and electronarcosis. Other activities, too numerous to detail, were arranged, but the culmination of the entire meeting was the formation of the World Federation of Mental Health, on which so much of the future of mankind may eventually depend.

It would be fitting at this stage to take a glance at the background of the gathering and attempt a formulation of the ideals and aims which motivated such an attempted synthesis of the ideas of different cultural and scientific groups, for not only were ideologically antagonistic nations there, but also psychiatrists, psychologists, sociologists, anthropologists, political scientists, philosophers, public health officers, educationists, nurses and other disciplines too numerous to mention. The International Preparatory Commission had taken as their theme the following quotation from the eclectic founder of psychobiology, Adolf Meyer, whose unredundant statement typifies the aims and purposes of the congress:

> We have to be able to be at peace among the different cultures and religions without sacrificing what is differently cherished and worshipped . . . . How the necessarily private and personal minds can become harmoniously blended is one of the studies within psychiatry and in all the search and research of the sciences that work together on and for man.

His Majesty the King sent a message to the congress, in which he used the following words:

> The subjects which you are to consider embrace vital aspects of human relations, and your discussions will arouse wide interest far beyond your own scientific circles.
>
> I appreciate the importance and the complexity of the task you have undertaken. The careful preparatory investigations which have been carried out, and the determination of men and women with such varied professional backgrounds to work so closely together will, I am confident, contribute to a better understanding of troubled communities and a convalescent world. I have noted with special interest that you are to devote so much attention to problems of good citizenship and neighbourliness . . . . May your discussions, and the friendship engendered through the Congress, help to promote a healthier and happier world society.

For years interest in social psychology has been growing and there has been an impetus towards an understanding of the structure and dynamics of groups. In the recent hostilities morale had to be maintained during prolonged periods of waiting and training, and much research was done into the all-important factor of mental health. By means of teams of investigators—psychiatrists, psychologists and social workers—the psychopathology of social situations in the military groups was elucidated and remedies were then suggested; results were considered to be sufficiently encouraging to warrant an attempt to apply these findings to civilian groups. It is obvious to the social scientist that communities are mentally ill, that the world as a whole is ill, and that unless a reorientation of mankind can be produced we are driving on inevitably to a condition of aggression and ultimate disorganization; it is obvious, too, that the same attitudes met with in army groups—feelings of inferiority, persecution, fear, aggression, megalomania and so on—occur within and between national groupings, and that these attitudes lead to international tensions and war. Viscount Addison, Lord Privy Seal, welcoming the conference, made the following statement: "War begins in the minds of men and it is in the minds of men that the defences of peace must be constructed." He also drew attention rather pointedly to the conception of health formulated thirty years ago by the newly formed British Ministry of Health: "Health is a state of complete physical, mental and social well-being, and not simply the absence of disease or infirmity."

What came out clearly during the war, and has been applied effectively since the war, is that problems of social psychopathology are multifaceted and require trained personnel from many professions both for their elucidation and for their management. Any light which can be shed upon the scene, whether by psychiatrists, psychologists, educationists, anthropologists, sociologists, medical officers of health or theologians, needs to be evaluated. Obviously the best way to obtain a reasonable synthesis of all the knowledge these various workers can provide is by teamwork. Mr. R. A. Butler, M.P., president of the National Association of Mental Health, expressed high hopes of the conference, because he realized it represented every profession concerned with mental health; he hoped that the beneficial effects would be transmitted to other mental health workers throughout the world, and through them to administrators, politicians and diplomats. It was not anticipated that magical formulæ for the cure of group-tensions would appear. What was aimed at was the finding of points of agreement from which research could be started, and also determination of the nature of the various disagreements. It was hoped to discover those basic principles of mental health which were acceptable to all disciplines engaged in the study of mankind, and to transmit them to such bodies as the World Health Organization and UNESCO for their guidance.

The general principles which motivated the congress may be summarized thus. Human behaviour is modified by human contacts, especially up to adolescence, and characteristic patterns of behaviour are laid down by social institutions such as family and school, with the production of a traditional personality which resists change. Society and humanity are both plastic, but once patterns of prejudice or hostility are laid down it is difficult to deal with them; accordingly any attempt to modify behaviour must be appropriate to the stage of development of the individual, and a state of acceptance

[1] Read at a meeting of the Australasian Association of Psychiatrists, Melbourne, on October 20, 1948.

must be engendered where necessary by education. To overcome national and international tensions and prejudices—which is essential for the proper furtherance of principles of mental health—it is necessary to accept the idea of world citizenship, which need not conflict with traditional loyalties to family, community or nation, but will rather aid them. If social change is to be effective, administrators need to cooperate with social scientists and to appreciate both the modifiability of the mental factor in human behaviour and the new vistas which have been opened up by the social sciences.

It is impossible to give more than the barest outlines of the material presented at the meetings. At the child psychiatry meeting difficulty was experienced with regard to the concept of aggression; some regarded it as inclusive of the "going out" quality, which may be creative, whilst others preferred to restrict it to the pathological results of repression and frustration. Anna Freud and Melanie Klein expressed their characteristic views. Emanuel Miller, who summed up the first meeting, which was on "aggression and emotional development", made the observation that children who were active in the uterus in the latter part of pregnancy tended to be active, aggressive children. In a discussion on aggression in relation to family life, the best contribution was that of Professor McCalman, who stressed the importance of the alleviation of aggressive tendencies by means of a background of stable affection in early life, and finished by quoting a Chinese proverb: "If there is righteousness in the heart, there will be beauty in the character; if beauty in the character, harmony in the home; if harmony in the home, order in the nation; if order in the nation, peace in the world." The final two discussions on aggression in children were in relation to education and delinquency. The plasticity of the child was amply demonstrated by Dr. G. Van Loon, who described 540 orphaned Dutch children who had lived under the worst possible conditions and yet of whom only 5% showed aggressive behaviour and anxiety after foster-home placement. A novel plea was made by one speaker for the abolition of all juvenile courts and judges; he considered a special non-legal department should deal primarily with these cases.

The psychotherapy conference began with an exposition of guilt from the psychoanalytical and theological viewpoints—the first regarding guilt as an acquired process due to parental condemnation, the second considering guilt to be inborn. The session which followed demonstrated the value of an understanding of the dynamics of the unconscious in relation, of course, to the analytical viewpoint. Dr. W. C. Hulse pointed out the importance of cultural factors in the pattern of guilt portrayed, contrasting especially the different psychodynamics of the American and German soldier. Margaret Mead, in the third session, which was concerned with "collective guilt", carried this further in an anthropological exposition of the subject, and a discussion of the variations of viewpoint in different cultures led her to state that this typically human function of guilt was neither universal nor necessary. Dr. H. V. Dicks analysed the paternalistic, repressive, rigid cultural structure of pre-war Germany. The final session was taken up with advances in individual and group psychotherapy. Dr. W. B. Terhune described an eclectic "brief therapy", based on principles of abreaction and a rapid transference, and whilst it was considered that this was a prime method in selected cases, it was generally held that it could not be a substitute for a major analysis in those cases in which that form of therapy was required. Dr. Strauss said that short cuts in therapy were required, and he cited the growing use of narcoanalysis, abreactive techniques, analytical group therapy and therapeutic social clubs. Group therapy is still very much in the experimental stage, and whilst no claim is made that it can produce a result equivalent to individual therapy, a stable element of improvement may be detected in some cases; however, no scientific validation of its usefulness has so far been provided. Dr. S. R. Slavson pointed out the importance of proper selection of groups according to the psychodynamic syndromes and not according to symptomatology.

The main conference, that on mental hygiene, began with a general discussion on mental health and world citizenship. Dr. G. Brock Chisholm, director of the World Health Organization, pointed out that little could be expected from governments until people everywhere became broader in outlook and capable of functioning emotionally as citizens of the world, and he hoped that the World Federation for Mental Health would play an important part in helping the world in that respect. This was followed by a discussion on the importance of the family in mental hygiene, and on the serious psychopathological effects of the break-up of family life which was occurring throughout western civilizations; premarital and marriage guidance were stressed, as well as adequate sex preparation in early life. After the session on mental health work in industry, in which it was pointed out that other personnel than psychiatrists could play a leading part, the congress concluded with a discussion on general planning for mental health organization, training and propaganda. I was interested to hear of the Irish *Mental Treatment Act* of 1945, in that no judicial authority intervenes in the reception of a mental patient into the mental hospital, the process being entirely under medical jurisdiction, with the result that the stigma of psychiatric disease is being rapidly removed.

The World Federation for Mental Health was formed during the period of the congress. I felt honoured to be an observer at such an historic occasion, which was attended by Dr. H. Maudsley, our retiring president, who was the Australasian delegate; Dr. E. J. T. Thompson and Dr. Grey L. Ewan were also present as observers. Those attending were encouragingly welcomed by Dr. Julian Huxley on behalf of UNESCO, whose executive board had already recommended that the World Federation for Mental Health be accorded consultative status and be eligible for financial aid; also by Dr. G. Brock Chisholm, who stated that the executive board of the World Health Organization had acted similarly. All countries who are members of the United Nations are eligible to be members of the World Federation of Mental Health, this restriction being made because of the need to cooperate in the work of UNESCO. We in Australia, together with some fifty other countries, can join immediately, provided we have some responsible organization which can make application for membership. Twenty-three countries, by virtue of the fact that they had national mental hygiene organizations and were members of the original International Committee of Mental Hygiene, automatically became foundation members of the newly formed World Federation. Since, in order that Australia might become a foundation member, application had to be made before November 1, Dr. Maudsley applied on behalf of the Australasian Association of Psychiatrists. A financial contribution of 400 Swiss francs (£25 sterling) *per annum* needs to be made if this is acceptable to the association. Ideally, a more representative body than the Australasian Association of Psychiatrists—namely, a national association for mental health—should be the one to deal with this matter, and it is to be hoped that such a group will be formed in the near future with the support of our own Association. The people of Australia need to realize the widespread implications of developments overseas, and all those engaged in the social sciences will need to take their part in the general mental health movement. The World Federation of Mental Health is to have its centre in Geneva. An executive board has been appointed, consisting of a president (Dr. J. R. Rees, of the United Kingdom), a vice-president (Dr. André Repond, of Switzerland), a secretary (Dr. K. Soddy, of the United Kingdom), a treasurer (Dr. W. Fremont-Smith, of the United States of America), and twelve members from different countries, with at least one representative from each continent. The first appointed member from Australasia was Dr. J. Russell, Director of Mental Hygiene in New Zealand; he was the only accredited member from Australasia representing an organization with original membership of the International Committee of Mental Hygiene. The members of the International Preparatory Commission who prepared the special pamphlet were requested to act as an intra-professional advisory committee for the federation.

Having now presented to you the factual data which it is my duty to submit, I crave your indulgence for the remaining minutes whilst I endeavour to analyse the results of the congress and give you my personal impressions. It is impossible to listen to a symphonic suite for the first time and immediately appreciate the fine nuances and the full development of the themes; one can only appreciate a few highlights. A medical conference is similarly constituted, in that one listens to apparently unending oration often without the compensatory satisfaction that an attempt is being made to produce pleasing sounds, as with the symphonic music. I cannot honestly say that I have absorbed even a tithe of all that to which I listened, but there are certain impressions which I have gained, the main one being the harmonious outlook of the different disciplines; we seemed to be on the whole talking the same language, we seemed to be understanding each other, and we were expressing the products of our different settings in similar form. One may criticize the fact that the organicists and geneticists were very poorly represented and, for my part, I was sorry they were not as vociferous as the analytical groups. The pendulum at present has swung, and I consider rightly so, in the direction of the environmentalists, for it is on this aspect of the study of humanity that the drives of the community are orientated; and there is an immediate need to carry out exhaustive research into the modifiable traits of personality, since it is in the alteration of these that our hopes of producing stable, non-warring societies must reside. Just as there are vast destructive forces in the collective mind of man, so there are immense potential constructive forces; which will gain the day depends on the cooperative effort of social scientists and administrators. Science is coming to the end of that epoch when the predictive physical phenomena of a natural world engage its sole attention; it has failed till recent times to realize that man does not live by bread alone and that it is just as necessary for him to determine motivations of behaviour as it is for him to be provided with physical forces. It gives me great satisfaction to realize that the aim of the congress was not to instigate social reforms, but rather to help infuse a scientific attitude into the many reforms which are being instituted all over the world; to help enlarge the concepts of medicine to include psychiatric ill health; to discover ways of releasing human potentialities for good in every sphere of human activity; to orientate social scientists to an understanding of human plasticity and prevent concentration on small aspects of personality and small periods of total life history; and to realize that the political, social, economic, legal and religious organization of the community and institutions such as family, school, factory and clubs are the living framework within which the process of human growth takes place. The combined efforts of social scientist and psychiatrist have brought out the facts of the constant interaction between economic, social and psychological forces and the lack of investigation of the latter factor. The necessity to introduce incentives into industry, despite generally improved conditions, shows that what was once considered to be purely an economic question can be understood and dealt with only in terms of mental health. The general principle which needs to be followed in furthering the proper development of the individual is to adapt the processes of education to the stage of his biological development and guard against the introduction of harmful experiences; but one must not automatically assume that the standard of child rearing of one society is better than that of another, without taking into full consideration the type of individual that that society demands. Teachers need to be properly trained not only to detect incipient behaviour disorders, but actively to promote the development of constructive traits in the personality. Marriage and family guidance clinics for parental education need to become as acceptable to the community as child guidance clinics.

The most important question which faced the congress was the question of world citizenship. As I understood it, it was not world citizenship in the political sense, but rather the idea of a common humanity, local allegiances still being preserved, but general group attitudes and ideals compatible with the larger world community being developed. Arising out of this appeared a sense of urgency, a need to reformulate the ideas of social scientists in relation to the new knowledge of individual and group psychodynamics, but nevertheless, as has already been stated, fully taking into consideration economic and political sources of conflict as well. However inadequate one may consider that the scientific approach to community problems, such as war, has been, one cannot gainsay that significant facts have emerged. I am one of those who believe that we already have world citizens, thinking beings, whose minds are not bound by passports, but are linked with others in distant parts of the world through the rapid development of physical and ideational means of communication. We already have a world community in the making—through food organization, public health regulations, postal union, scientific and cultural exchanges, UNESCO, the World Health Organization, and the International Labour Office—run by a body of world citizens who can combine common good with national loyalty. It is possible to visualize a general world community, free of group tensions and embracing respect for individual and cultural differences. It was attained at the conference, and even though certain groups were politically at variance there was never a hint of unresolvable friction within the conference itself, though I regretfully confirm the absence of any Russian representatives.

Arising out of the congress would appear to me to be certain aims which the Australasian Association of Psychiatrists should foster:

1. The mental health of Australia should be developed according to its needs; this work should be dependent primarily on a vigorous programme of research. The programme should begin where the need is obvious and expand on the basis of present requirements, rather than attempt to foster a blueprint borrowed from another cultural group which might not be suitable for local conditions.

2. In addition to the provision of proper care for patients with chronic and early psychiatric disorders, the encouragement of true prevention in the form of child guidance, family guidance and the psychological reorientation of all individuals dealing with the problems of human beings, needs to be furthered.

3. All those concerned with the human sciences should be brought together and accept responsibility for mental health, after their respective roles have been defined. This should result in the formation of a national association of mental health, which is a necessity, not only in relation to the needs of Australia, but also in relation to the exchange of ideas with similar organizations in other countries. Such a national association of mental health should maintain a close relationship with medical and allied professions and should encourage the development of local branches, so as to stimulate popular interest from within the community.

4. Professional training should be wide in its scope and should be based on teamwork. Within the limits of our present knowledge, careful selection should be undertaken.

5. Education of the general public in mental health matters should be carefully controlled and should be promulgated through specially orientated professional workers in all fields. Mental health rather than mental illness should be emphasized. Liaison should be established with administrators and persons in the special fields of communication — Press, radio, films *et cetera* — and in respect to films, their special techniques should be utilized in the educational process.

6. The scientific integrity of research should be maintained free of any political control; full responsibility must be accepted by the researchers for any material published. It should be the responsibility of governments to provide opportunity for continuous research into all matters relating to human welfare. Universities and research foundations should see that the activities of all the departments engaged in studies related to the welfare of mankind are coordinated.

7. Finally, the World Federation of Mental Health should be fully supported in its international activities, and special researches and surveys should be undertaken when required by the World Health Organization.

Conclusion.

I would, in conclusion, emphasize the embryonic nature of the World Federation for Mental Health. Whether it will reach maturity will depend on world political developments as well as on the efforts of mental health movements in all countries. We psychiatrists, however, must not forget that we are but members of a wider group concerned in social health, and that, although the mind of man is becoming more receptive to advice on mental health, there are few of us who are fitted for any executive role in bringing this about; we should contribute our necessarily limited quota to the general knowledge of the social sciences so that leaders who will emerge will be able to utilize this knowledge in all the spheres in which it applies. We should see ourselves as part of a wider social hierarchy of intellect and not endeavour to establish a psychiatric imperialism which will only generate those very group tensions which we so avidly demonstrate. In the medical sphere we should likewise see ourselves as part of a total programme of preventive medicine. The general body of social scientists and all those concerned in the promotion of public health should support the World Federation for Mental Health, for it is only by the attainment of a healthy mental outlook in all peoples that the highest destiny of man will be fulfilled and we shall truly have reached the subject of the Mental Hygiene Congress—"Mental Health and World Citizenship".

OBSERVATIONS UPON GROUP THERAPY.[1]

By PAUL G. DANE,
Melbourne.

THE following observations are the result of a study of group therapy which was carried out on four groups of psychotic and borderline psychotic patients at Saint Elizabeth's Hospital, Washington, over a period of seven months, and also on a group of psychoneurotics at the Veterans Administration, Washington, over a somewhat shorter period.

Group therapy became prominent during the second World War—out of the necessity for treatment of large numbers of soldiers who had become psychiatric casualties during that time of horror and for the treatment of whom there was a grave lack of trained psychiatrists. Group therapy had, however, been tried as a method of treatment previous to the war. Dr. J. H. Pratt, of Boston, had treated tuberculous patients in groups and Dr. Moreno, of New York, was a pioneer in the treatment of emotionally disturbed patients by this method. He is also, of course, the originator of treatment by psycho-drama, which is really a method of group therapy. But the determinants that led to group therapy were, first, the recognition that the neuroses and psychoses arising during war and peace are essentially disorders of the mental apparatus and, secondly, that being psychological disorders they had to be treated by psychological means. A more remote determinant is the realization that all animal life is a group phenomenon, and man is more than all a group or social animal.

Group therapy can thus be classed as one of the new methods of treating disorders of the mental apparatus that have arisen in the interim between the two World Wars.

But this is not quite correct; sick people have been treated in groups as far back as medical history can trace. In the temples of Diana and in other places in ancient Greece patients gathered in numbers to partake of the healing procedures, and no doubt many were comforted and their fears were assuaged and their anxieties rendered less distressing by the therapy then in vogue. Æsculapius himself used group therapy. Jesus of Nazareth, a profound psychologist, declared unto the people: "For where two or three are gathered together in my name, there am I in the midst of them." No doubt He knew the power for mutual support and the calming influence engendered in a group of people disturbed by inward and outward agencies. Of course, it may be said that all therapy has a group element, for even in individual therapy there is a group of two; it must be seldom that any human has fought disease and suffered pain alone; all fear sickness—all seek the help of another, be he a great surgeon or physician, be he a minister of religion, be he an osteopath or chiropractor, be he a quack or be he just a humble friend. In no situation does a man stand alone, not even on the scaffold; even on that tragic throne a helper stands by.

So insistent is this desire and drive for company in the life of man that psychologists have postulated a "gregarious instinct". Therefore it is not to be wondered at that treatment in groups along scientific lines (or as nearly scientific lines as is possible under the circumstances) has arisen.

It must be realized by all who are interested in this method of treatment that at present the whole subject is in the experimental stage; we have not yet reached the stage when a text-book on group therapy can be written. I sincerely hope that one never will be written, as I regard text-books, especially on psychiatric matters, with considerable doubt.

There are really no rules to guide the beginner in this therapeutic procedure—no set times of attendance, no particular types of subjects to treat. Several articles have appeared in different journals giving the experience and advice of the medical men who have been using group therapy, but the whole position in regard to this therapy is still fluid. It can be applied to any type of neuroses and to many kinds of psychotic reactions, it can be applied to delinquents, to stammerers, and—not the least important—it can be applied to the relatives of delinquent children or behaviour problem children, or to relatives of any people who are ill.

This ability to treat the relatives in groups is really a most astounding therapeutic advance, because it has long been recognized that the ætiology of neuroses, psychoses, delinquency *et cetera* extends out into the social and family relationships of the sufferers and that the persons entering into these relationships, more especially in disorders of children, are often emotionally disordered themselves—even frankly neurotic or potentially psychotic.

Up to the present we have possessed no method of reaching and treating these folk. Even Freud somewhere declared that he had learned something of how to treat a neurotic but nothing as to how to treat the neurotic's relatives.

Out of this initial stage of flux, however, there are emerging certain principles about the general set-up of groups, the psychodynamics of groups and the types that should be allotted to different groups.

The General Set-up.

The number of patients entering into groups is all-important. The general consensus of opinion is that for most classes of disorder the small group is the most therapeutically potent; six to eight patients are an optimum number, especially for children, neurotics and relatives. If the group is smaller than this there is always the possibility of the therapy losing its efficacy through the inability, for one reason or another, of one or two members to attend. In a very small group there is not the same play of interpsychic forces; there is not the augmentation of the desire for cure through mutual suggestion; there is not the dilution of hostility and love impulses; and there is probably more concentration of the various instinctual impulses upon the person of the therapist. There are therapists who deal with large numbers in their groups, up to one and two hundred, but it is hardly correct to call such bodies groups—the therapy is rather that of intellectual instruction, a didactic approach. But when we come to psychotics or borderline

[1] Read at a meeting of the Australasian Association of Psychiatrists, Melbourne, on October 20, 1948.

psychotics the group can be large (30 or 40 in number). I attended at Saint Elizabeth's Hospital four groups, one of these a group of criminal psychotics, and each group consisted of 20 or more patients.

One of the reasons for allowing the larger groups among psychotics is that some of the more severely disturbed patients may be mute or restless and thus take no part in the group discussion, or some patients may not be able to attend each session owing to a violent increase in their symptoms, a negativistic attitude towards the group *et cetera*. A group of psychotics is in its very nature a fluid group, and again, there is so much aggressive drive in many psychotics that it is a rational procedure to dilute these impulses as it were; the risk of personal attack upon the physician or other group member is thereby lessened. One group of criminal psychotics was very large (some 50 or 60); it was interesting to note the multiple hostile drives among the various members towards each other, but very few towards the doctor. This group had a Negro mandolin band, and singing and dancing were part of a daily group routine.

Groups should meet at least twice a week, preferably three times, otherwise resistances increase too much between each session. At the American Veterans Administration out-patient clinic the groups of neurotics met twice a week, as in England; psychotics generally met three times a week.

One of the most important principles to realize is that the group is in no way a formation—that is, it is not organized; the group is purely a voluntary association, it is an amorphous body, it has no leader or prompter. With psychotics this principle does not hold so strictly; some psychotic groups elect a chairman from among themselves, perhaps a new one each day or one to hold office for a week, but a chairman is not absolutely necessary. Such an office is useful among schizophrenics, many of whom are apt to be noisy, restless or unruly. It is surprising how readily such patients react to a chairman; generally speaking the ruling of the chairman is obeyed. The election of a chairman also helps to get the group going: verbalization is started, discussion and criticism are engendered, the chairman is representative of authority, and around him play hostile and libidinous affects, which otherwise would be directed to the therapist. It must be emphasized that the therapist does not act as a leader but only as a "participant observer", as the late Dr. Harry Sullivan terms him.

The group activity may extend over a year—certainly no solid achievement can be expected in a shorter time. In America some therapists have a psychologist as a second participant observer and a mechanical recorder; the assistant takes notes of the patient's emotions and of their verbal expression, and at the end of the session (an hour) the therapist and psychologist compare notes and attempt to interpret the focal points of the group discussion and analyse the participants.

A record of the group's proceedings is made mechanically for future reference. In England this is not favoured; there is only one participant—that is, the therapist himself—the idea being that confidence may be lessened by the presence of persons other than the doctor.

The personnel of the group must all be of average intelligence and of the same sex. It is not necessary that each member should present a symptomatology similar to that of each of the others—in fact, it may be desirable to have a mixture, say, of the introvert and extravert type. Stammerers are a type in which this principle does not apply; the group for stammerers should be one in which each member has some speech disability, not necessarily a stammer. A patient with aphasia or a patient learning œsophageal speech following removal of the larynx may form one of the group.

The therapist himself is of course the most important figure in the whole set-up. It is not absolutely necessary that he be a psychiatrist, but in my opinion (and I think that of most medical men interested in group therapy) the therapist should have had a sound training in psychoanalysis—he should be analytically orientated and, better still, have undergone a personal analysis. I do not think it is possible for anyone, however skilful a psychiatrist he may be, who has not become analytically minded to understand the complex interplay of forces that occur in an individual analysis as well as in a group analysis. Repression, transference, identification are among the chief mental mechanisms that must be understood, that must be observed and interpreted; only a person analytically trained is fully competent for these tasks.

Dynamics of Group Therapy.

LeBon, Trotter, Freud and other psychologists have dealt with "crowd psychology", endeavouring to analyse the psychological set-up that ensues in a crowd; all agree that there is something different in the psychology of a crowd from that of an individual. Psychic dynamisms are engendered, or perhaps pre-existing ones are reinforced and receive redirectional impetus. The relationships to reality are diminished, the ego control is weakened, suggestibility is increased and emotional lability is heightened. An empathy between the individuals of the crowd is established. All crowds have a leader of some kind; even a mob has a leader—he may not be actually present, but he is in the background somewhere; the leader may even be an abstraction.

Freud explains the peculiar behaviour of crowds largely through the identification of each individual with each of the others and with the leader.

A therapeutic group is something similar to a crowd; it is not an organized formation, and in this it resembles a crowd, but it is a voluntary association for a specific purpose—with a participant therapist, not as a leader, but as one of the group, as an adviser and helper; in this it differs from a crowd.

In a group each member soon recognizes that his problems are not unique, that others are inhibited, insecure, isolated, depressed, oppressed with anxiety and burdened with guilt as he is, his problems can be discussed openly in an atmosphere that is a social atmosphere and yet an atmosphere capable of some understanding. Because each member is ill like any other member, he is allowed to criticize others and to be criticized himself in a friendly manner; anxiety and fear are thus gradually lessened—these affects suffer a dilution; guilt is shared with others; inferiority is not so poignant when one is in a group, all of whom feel inferior; some understanding of the origin of these affects emerges and also their depressing effects are removed. A group to some extent resembles a family setting: rivalry, hatreds and loves such as occur in the family can be ventilated, and the authoritative father figure in the person of the therapist can be subjected to assaults of aggressive or libidinous types in the verbalization that takes place.

I believe that one of the most effective dynamic mechanisms of a group is that the attitude of ambivalence to the father and family surrogates can be worked out simultaneously; aggressive urges may be directed on to one personality and libidinous urges on to another one of the group at the the same time. This cannot occur in individual therapy to the same extent. Interpersonal relationships become established on a more solid basis—emotional catharsis and abreactions reduce psychic conflicts. Each individual in a group feels he is not isolated and rejected by his fellow men, each becomes identified with each of the others and with the therapist; thus each member has his ego strengthened at the same time as abreaction of affects is taking place through mutual empathy; conflict is thus lessened, insight gained and confidence strengthened.

But it is not only through verbalization that symptoms are lessened; the more important part of the group therapy is that instinctual drives are to some extent at least acted out. The members of the group lose their reserve and caution and fear of one another. The self-esteem of the individual, his narcissism, is not wounded, because he soon realizes that he is not only in a friendly society, but in a truly sympathetic one—a society that has some understanding of his problems.

In a group one of the most important mechanisms is that the transference situation is rendered easier towards the therapist, who is a parental figure; the transference affects are diluted, because some of these affects are directed

to other members of the group who act the part of siblings as in a family; also the individuals, as it were, come together against the therapist, and this mutual support and good interpersonal relationship allow them to talk and act out more freely their repressed emotional attitudes. In this way each one's anxiety tends to be lessened and a cathartic result is obtained, not perhaps a dramatic catharsis, but a less obtrusive one.

In individual analysis the therapist is largely passive; in group therapy of neurotics he is also passive, but not quite so passive as in the individual analytical situation. However, in a group of psychotics the therapist can and is more active. This is in line with the method adopted by some analysts who treat psychotics by analysis —notably Dr. John Rosen, who, as it were, attacks the patient with direct interpretation.

The therapist intervenes with interpretations at times and in situations which he deems appropriate; but interpretation of a sort is going on all the time amongst the members. The more this occurs the better; cure is thereby hastened; less hostility is engendered by interpretation from a group member than from the therapist. Such interpretation is likely to be couched in phrases that are more acceptable to the patient's unconscious as well as to his conscious ego, coming as they do from a fellow sufferer rather than from the therapist, and in the type of language usually spoken by the group of society in which the patient has lived. This is in line with the old adage, "set a thief to catch a thief"; it also takes a schizophrenic or a neurotic to understand a sufferer such as himself.

Are There any Dangers in Group Therapy?

I have not seen harm result from group therapy in any of the groups I was permitted to observe, but it is possible that a situation may arise in which hostility to the therapist or to one member becomes intensified through suggestion and empathy; such a situation may approach danger. In such a case individual therapy would have to be instituted to resolve the aggressive impulses, otherwise the group might become an uncontrollable mob. Hostility must of course be dealt with—discharged in the group if possible; the more hostility that is discharged, the better.

Advantages of Group Therapy over Individual Therapy.

Advantages are claimed for group therapy over individual therapy. Firstly, it is held that classical psychoanalysis sets up a highly artificial situation, in that the patient has to spend many hours lying down on a couch with the analyst seated as it were in the background; this situation has no counterpart in real life except perhaps the confessional. On the other hand, group therapy takes place in a situation that is more normal. It is essentially a social situation—a situation like many situations in real life and resembling in some respects the situation that is the most important to all of us—that is, the family; the various affects and values that have arisen in the family situation can thus more easily be acted out.

Secondly there are certain types of disorders that have a large social element in their ætiology. All disorders have some aspect or facet of a sociological nature, but in some it is embarrassment or inhibition in a social situation that is the oustanding symptom. It is this sociological situation that is to some extent reenacted in the group. There is one type of neurotic disorder, with which we are all familiar, and which is social, or rather is due to a failure in social integration—the so-called inferiority complex. These people are withdrawn, shy, inhibited—they are insecure and feel that they have been rejected. There are large numbers of this type in any community and for them group therapy is the method of choice; it is therapy in the very situation in which these people feel awkward. I do not mean to say that this type of disorder has purely social roots—it has, of course, roots far back in pre-social days; but even if group therapy does not reach down deeply into the psyche, it readjusts the personality of the patient sufficiently for him to continue further readjustments by "the will to live" of his own ego.

Psychotics are on the whole more suited to group therapy. Psychosis is a withdrawal from reality—it is a social disorder, it is a breakdown in interpersonal relationships; the psychotic is afraid; he feels more secure in a group, especially a group of similar people; his defences are more prone to weaken gradually under the influence of what we may call mass suggestion, and sooner or later even the most withdrawn schizophrenic may (and many do) commence to verbalize.

Group therapy is not intended to replace individual therapy—it is a supplement or an aid to such therapy. There is no therapeutic reason why both forms of therapy should not be used in appropriate cases. In fact, in nearly all groups one or other of the patients seeks individual interviews with the therapist to disclose occurrences or thoughts which he may not be able to face in the group or to seek advice. Such interviews are part of the treatment. In group therapy we have an instrument for the treatment of many disorders. We do not yet know its limitations or possibilities, but it is a form of therapy that has come to stay, and should form part of the treatment in all institutions and clinics that deal with psychosis and neurosis.

A SIMPLIFIED AND INEXPENSIVE PNEUMOTHORAX APPARATUS.

By ALAN H. BAILEY, M.B., B.S.,
Medical Superintendent, Westwood Sanatorium, Queensland.

THE commonest form of portable apparatus in use in Australia for the production and maintenance of artificial pneumothorax and pneumoperitoneum is that known as the Stokes-Stobo apparatus. While this apparatus is a simple and portable machine, its use in clinics and sanatoria, where large numbers of refills are carried out at one time, is accompanied by some delay in transferring fluid from one bottle to the other, as in this apparatus the air is delivered from one bottle only. In an effort to overcome this delay the following apparatus was constructed.

Essentially it consists of two 1000-millilitre "Soluvac" bottles connected to a steel bar approximately eighteen inches in length. The ordinary light collar of the "Soluvac" bottle has been replaced by a stainless steel collar, to which has been riveted a stainless steel Y-piece, the base of which has been slotted to admit the end of the bar; the connexion has been made with a pivot, allowing the bottle to remain in a vertical position irrespective of the position of the bar. In turn, the bar pivots around its centre on a bolt and between friction washers, which permits the bottles to be swung into any desired position in relation to each other and remain there.

The rubber cork of each bottle is pierced by two glass tubes, one long and one short, arranged so that the long tube extends nearly to the top of the bottle, the short tube being level with the 900-millilitre mark on the bottle.

The two short tubes are connected to each other by rubber tubing. Each of the long tubes contains a cotton-wool filter, and to the end of each is attached a small piece of rubber tubing into which has been inserted a "Record-Luer" adapter, so that the Luer fitting is outwards.

A Y two-way cock and a U tube manometer are mounted on a board below the bottles. This board and the block carrying the pivot bar are attached to the wall. The two-way cock is arranged so that the common outlet is attached to a rubber tube leading to the needle and patient. One of the other two outlets is attached to rubber tubing connected with the U tube manometer, and the other outlet is attached to a rubber tube, into the free end of which is fitted a "Record-Luer" adapter, so that it will connect with the adapter on the bottle.

To use the apparatus, one of the bottles is filled with fluid and the empty bottle is connected to the two-way cock. The latter is turned to close this connexion, which automatically opens the connexion between the U tube manometer and the needle. The bar is rotated so that the empty bottle is the lower of the two.

After the needle has been introduced into the patient's pleural space and a pressure reading taken, simply turning the cock starts a flow of air from the empty bottle into the pleural space by gravitational displacement with fluid from the high bottle. When the required amount of air

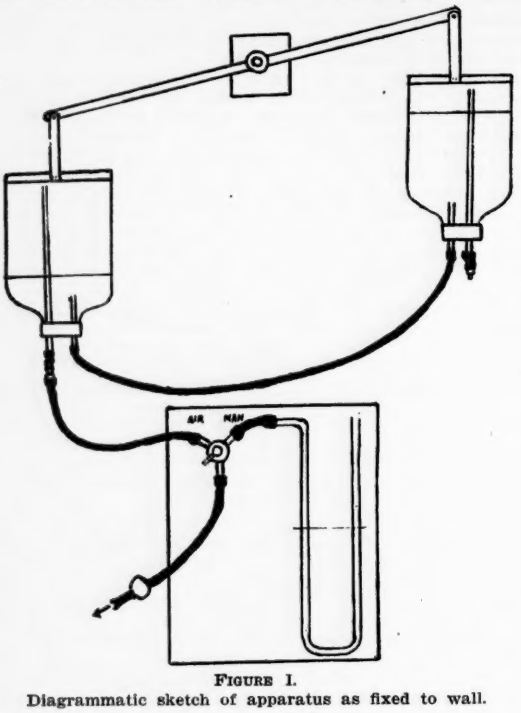

FIGURE I.
Diagrammatic sketch of apparatus as fixed to wall.

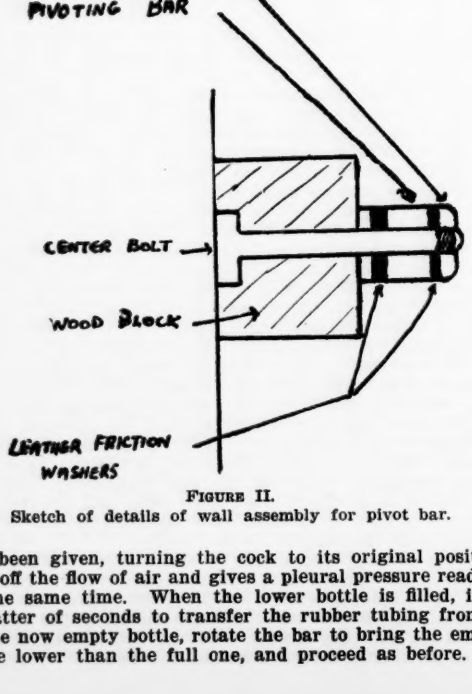

FIGURE II.
Sketch of details of wall assembly for pivot bar.

has been given, turning the cock to its original position cuts off the flow of air and gives a pleural pressure reading at the same time. When the lower bottle is filled, it is a matter of seconds to transfer the rubber tubing from it to the now empty bottle, rotate the bar to bring the empty bottle lower than the full one, and proceed as before.

The apparatus sacrifices portability, as it is attached to the wall in its present form. However, in practice it has been found to work very well, and a greater number of refills can be given with it in a given time than with the Stokes-Stobo apparatus. For this reason, and because it is very inexpensive to construct, it is offered as a substitute apparatus for chest clinics and sanatoria.

The apparatus can be used also for inductions of artificial pneumothorax and for the removal of air from the pleural space. The accompanying diagrams illustrate the apparatus (Figures I, II and III).

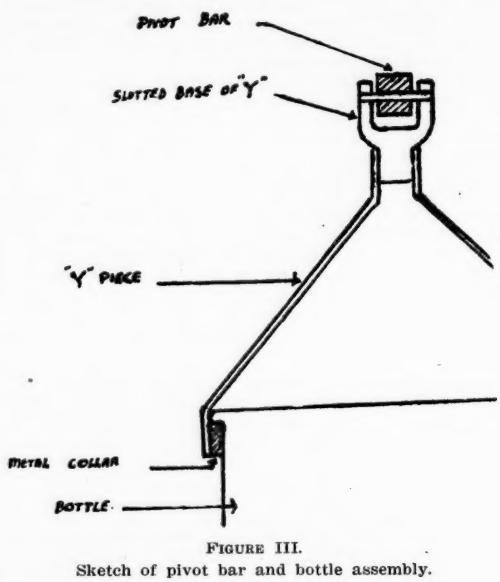

FIGURE III.
Sketch of pivot bar and bottle assembly.

Acknowledgements.

I wish to express thanks to Dr. M. R. Gold, medical superintendent to the Rockhampton Hospitals Board, for permission to publish the details of this apparatus, and to Mr. D. E. Morrison, chief fitter to the Rockhampton Hospitals Board, for his advice on the mechanical details and help in construction.

THE INSULIN TREATMENT OF SCHIZOPHRENIA: A TEN-YEAR "FOLLOW-UP".

By R. RAMSAY WEBB,
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AND
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IT is now generally agreed that insulin treatment is of real value in schizophrenia, although some opposition to its use still persists, mostly from psychiatrists who have had little personal experience of its administration.

However, the available figures showing the permanence or otherwise of the insulin remission are conflicting, and so it is felt that a brief report on patients who were treated with insulin ten years ago might be of interest.

During 1937 and 1938, 100 psychotics were treated with insulin at Mont Park Mental Hospital—this figure was arrived at after careful exclusion of all cases of neurosis, the remaining 100 patients being all frank schizophrenics or "mixed" psychotics, for the most part under mental hospital certification.

Information regarding the present condition of those patients now at home was obtained by means of personal interviews with patients, relatives and friends. Apart from ensuring that the information was more reliable and detailed than could be obtained by letters and stereotyped inquiries, this method obviated the possibility of causing distress by an impersonal and official approach.

Of the 100 patients treated, 66 were able to leave hospital some time after treatment, but in four cases the remission occurred so long after treatment that it is doubtful what part, if any, the insulin played. Of the 66 patients who had remissions, 44 are at present at home, although some of them have had temporary relapses.

TABLE I
Showing Original and Present Remission Rate.

	Number of Cases.
Number of patients treated	100
Number able to leave hospital	66
Number at home ten years later ..	44

Present Status of Patients Treated.

At Home.

Of the 44 patients at present at home, seven have recurrent relapses, 11 have had one relapse and the remaining 26 have not returned to hospital. The seven patients whose condition is recurrent have had several subsequent psychotic episodes requiring re-certification; however, they have spent more time at home than in hospital, and four of them are now employed. The 11 patients who have had one relapse have been home on the average for six years since their second discharge from hospital. They are all usefully employed except two, one of whom is a prostitute. Of the remaining 26 patients who have not returned to hospital, two are unemployed, one being apathetic and the other demented; the other 24 are employed at or near their pre-psychotic level.

TABLE II.
Showing Present Status of the 100 Patients Treated.

	Number of Cases.
Number of patients at home	44
Untraced	1
In hospital	46
Dead	9
Total treated	100

In Hospital.

The 46 patients in hospital represent those who failed to respond to treatment and those who did respond but later suffered relapse. A few of the latter remained well for a considerable period, but mostly they suffered relapse soon after discharge from hospital. This is a common finding and it is interpreted by the sceptics as evidence that insulin treatment shortens the period of the spontaneous remission. It would seem at least as likely that these patients represent the intractable type of schizophrenia, and that without treatment they would not have had remissions at all.

Deaths.

Of the 100 patients treated, one died under treatment, five died subsequently in hospital of intercurrent illness, and three died at home, one probably by suicide.

Treatment Employed.

The technique used was much the same as that commonly in use at the present time. In a number of cases convulsive therapy (then with "Cardiazol") was administered during hypoglycæmia, and in a few cases this appeared to be mainly responsible for the remission.

Owing to a lack of appreciation of the importance of limiting the period of hypoglycæmia, serious irreversible coma was a frequent complication in the early cases, and since this condition often leads to a dramatic lessening in the psychosis, the average number of comas induced—21 in the successful cases—was lower than that usually employed today.

Results.

It should be emphasized that these patients were not specially selected, in fact many of them were quite unpromising material. The average duration of the symptoms at the time of treatment was over one year and six months in the successful cases, and three years and three months in the failures, so that the patients were mostly past the stage at which spontaneous remission could reasonably be expected.

The conventional terms "full remission", "social remission" *et cetera* have not been employed to describe the successful results; instead the objective yard-stick of ability to remain at home and at work has been used.

However, the quality of the remission in many cases is most gratifying, for example, one patient has completed a university course, married and had two children; another continues his duties as a minister of religion; a third served in Tobruk, and is now a skilled tradesman. Three men served overseas in the recent war, and a fourth was in the Merchant Navy. Eight of the women have married and had children.

The fact that 37 patients, that is, over one-third of the patients treated or over one-half of those who had remissions, are at present usefully employed, would seem to justify a degree of optimism today that would have been quite unwarranted in pre-insulin days.

Acknowledgement.

Dr. Grantley A. Wright, medical superintendent of the Mont Park Mental Hospital, has kindly agreed to the publication of this report.

Reports of Cases.

CUSHING'S SYNDROME DUE TO CARCINOMA OF THE ADRENAL CORTEX.

By KEMPSON MADDOX, RICHARD FLYNN and EMILY DAY,
Sydney.

IN 1943 Farber, Gustina and Postoloff[1] collected 26 children, aged sixteen years or less, who had presented Cushing's syndrome. In three instances, an adrenal carcinoma was present.

It is now recognized that it is impossible to distinguish the cause of Cushing's syndrome on clinical grounds unless a tumour can be directly or indirectly demonstrated in the loin. Crooke and Callow[2] have shown that differentiation of basophilism due to adrenal cortical disease can usually be made by estimation of the urinary androgens. It now appears that further dissection of these steroids can often discriminate between simple and malignant tumours of the adrenal cortex. Carcinoma of the adrenal producing distant hormonal manifestations does not appear to have been reported previously in Australian medical literature, although adenomata with functional activity have been described by Flynn[3] and by Burnell.[4]

For this reason, it is desired to present the case of an adolescent girl who was recently observed and treated in the Royal Prince Alfred Hospital, Sydney.

W.T., aged sixteen years, was referred to one of us by Dr. David Brown. She stated that she had been well until one year previously, when she contracted double *otitis externa*. She had developed in all respects normally until six months before her first attendance. Her menstrual

periods had commenced at the age of thirteen years and had continued in a slightly irregular fashion until six months prior to this initial consultation. She now had had four months' amenorrhœa. During her school days she had been successful both at work and at play.

During the last five months there had been a slow but distinct change in her appearance. Her cheeks had become fatter, with considerable acne, and a growth of hair had appeared on the cheeks and upper lip. This hair was fine and short. Her skin had also become more oily. There had been no change in her voice or personality, and she denied any headache, vomiting, or interference with vision. Her weight had increased by one or two pounds only during this six-month period. She had never at any time experienced any great interest in the male sex, and latterly had become embarrassed by her new facial characteristics with prominent but not protruded eyes. Her family history was not remarkable.

On examination she was a well-nourished, rather florid-looking girl, with a weight of 131 pounds, a height of sixty-seven inches, a span of 69 inches, and equidistance from the *symphysis pubis* to the vertex and to the feet. Acne and comedones, especially the latter, were obvious on her face, and a growth of black, downy hair was visible over almost all regions of her body except the back, chest and inner aspects of the arms. Pubic hair was of male distribution. Her voice was of the normal female register and her manners and behaviour were of normal female character. Her breasts were small and flat. There was depression of the sternum, but her cardio-vascular and respiratory systems were entirely normal except for a slight elevation of her diastolic blood pressure. Her thyreoid gland seemed normal. Her central nervous system was completely intact without contraction of her visual fields and with healthy *fundi oculorum*. The clitoris was not enlarged, and rectal examination revealed no abnormality.

In the abdomen there was a distinct firm mass occupying the whole of the right loin, which was readily apparent on anterior palpation. This mass moved on inspiration and was slightly tender. The surface appeared to be fairly smooth. On the fluoroscopic screen, it was obvious that the right half of the diaphragm was elevated about three centimetres above its usual position.

She was admitted to the Royal Prince Alfred Hospital for further investigation about three weeks later. By this time her blood pressure had risen significantly, and now averaged 150 millimetres of mercury (systolic) and 100 millimetres (diastolic). Her blood hæmoglobin value was increased to 17·5 grammes *per centum* (120%) of normal), and her red cells were enumerated at 5,500,000 per cubic millimetre. An excretion pyelogram revealed normal appearances on the left side. The shadow of the right kidney was displaced downwards, the upper border being fused with a denser shadow above the kidney. The pituitary fossa was not enlarged and was normal in contour. A radiographic study of the epiphysis of the long bones suggested a bone age of eighteen to nineteen years, that is to say, some premature union had occurred.

Biochemical investigation gave the following information. The basal metabolic rate was −19%. A glucose tolerance test showed a fasting blood sugar level of 97 milligrammes *per centum* with a rise to 106, 177, 195 and 168 milligrammes *per centum* at half-hour intervals after the ingestion of 50 grammes of glucose. Sugar was present in the urine between one and two hours after the giving of the test dose. On admission to hospital, she excreted 33 milligrammes of 17-ketosteroids in the urine in twenty-four hours; one week later the urine contained 40 milligrammes in a twenty-four hour specimen, of which 23·8 milligrammes were androsterone and 16·2 milligrammes belonged to the dehydroisoandrosterone group. The urinary excretion of the corticosteroid-like hormones, determined by the method of Talbot, Saltzman, Wixom and Wolfe,[6] was 4·0 milligrammes in twenty-four hours on one occasion and 2·4 milligrammes on a second examination.

Operation was advised, to which the parents consented. Accordingly on February 2, 1948, under intratracheal ether anæsthesia, the abdomen was opened through a right subcostal incision and a large retroperitoneal tumour was found, which displaced the liver forward and to the left and extended upwards, pushing the diaphragm before it. The peritoneum covering the subhepatic pouch of Morrison was incised and the tumour was exposed. Coursing across its surface in all directions were large veins the size of little fingers; these were carefully freed and doubly ligated before division. The arterial blood supply was also sought and vessels as large as the radial artery were ligated. The branch coming from the inferior phrenic artery was reached with difficulty. As the tumour was further freed it was found to be about eight inches in length, its surface being much lobulated, greyish in colour and of quite friable consistency. After removal of the tumour the bed was of considerable size, and it was feared that some overlooked vein might bleed or even that the diaphragm might be embarrassed in its movements from the loss of the tumour support, so the area was packed with "Vaseline" gauze, the ends of which were brought out through a stab wound in the flank. The peritoneum of the posterior abdominal wall was repaired as well as possible and a few stitches were inserted between the *ligamentum teres* and the peritoneum of the anterior abdominal wall to keep the liver on the right side of the abdomen and by its weight to reinforce the packing. One and a half litres of blood were transfused during the course of the operation and ten millilitres of "Eschatin" were injected intramuscularly.

On completion of the operation the patient's condition was good, and with further blood transfusions, intravenous infusions of saline and "Eschatin" it stayed fair till next morning when both her temperature and pulse rate rose; she died at 2.45 p.m.

Unfortunately an autopsy was not permitted, and it is not possible to describe the anatomical characters of the remaining endocrines, in particular that of the opposite adrenal. Dr. G. F. S. Davies described material removed at operation as follows:

> Macroscopically, the specimen consists of a very large tumour from the suprarenal gland measuring 20 × 12 × 8 centimetres and weighing 1100 grams. Externally, the tumour is highly lobulated and lumpy and appears to be covered by a thin, transparent membrane through which pale and congested areas of tumour growth can be seen as well as some areas of hæmorrhage. Many of the projecting lumps are pale, while some of the fibrous areas between them are congested. The pale areas have a pale pink colour. On section, the tumour has a variegated appearance, large areas being yellow, degenerated and necrotic, while better preserved areas form very pale pink lobules of fleshy looking tissues.
>
> Histologically [see Figure I], the tumour is a highly cellular one, the cells being large with pale granular cytoplasm and a fairly well defined cell membrane. The nuclei are relatively large and hyperchromatic and have a coarse chromatin network and one or two chromatin knots. In many parts, these cells are œdematous and here they become larger and the cytoplasm is replaced by a large vacuole with or without a nucleus in the centre. Nuclei vary considerably in size, shape and depth of staining, though most of them are hyperchromatic and nuclear appearances generally are suggestive of malignancy. Blood vessels are fairly numerous and many appear to be sinusoidal. Around some vessels there is a minimum of fibrous tissue, but throughout this section, fibrous tissue is very scanty. In other sections, however, there are some thick fibrous trabeculæ. Some sections include areas of necrosis or of hæmorrhage. In several sections areas occur in which the cells are more eosinophilic than elsewhere. The cytoplasm is partly granular and partly foamy. In sections stained by Vines' method no fuchsinophilic granules have been found.

Clinical Discussion.

Crooke and Callow[2] state:

> The association of basophilism with adrenal cortical tumour is curious—each condition can exist without the other. When the two are associated, age and sex are obviously important, adrenal cortical tumour being rare in basophilism in the adult male, the rule in basophilism in the child, and common in basophilism in the adult female.

In 1939 Shepherdson and Shapiro[6] collected from the literature seventeen cases of Cushing's syndrome with diabetes (the so-called Achard-Thiers syndrome), adding one of their own. Half of these were due to adrenal carcinoma. Hirsutism and diabetes were present in 100% of cases, hypertension in 93%, obesity in 72%, and a dusky acneic skin in 50%. In all, diabetes was clinically prominent, and it was often present in the family history. Virilism preceded diabetes—often by some years. Thyreotoxicosis was often present, also hypertension.

One case reported by Farber, Gustina and Postoloff[1] was identical with our own. A patient whose case was reviewed by Cahill,[7] also a girl, aged sixteen years, who was masculinized and all of whose epiphyses had united, recovered after operation, but the growth had apparently been present for three years.

Discussion of Biochemical Findings.

The biochemical findings fall naturally into two groups. The first group consists of the figures related to the androgenic activity of the tumour. Although the total excretion of 17-ketosteroids was about three times greater than normal for a girl of this age, such a level is not infrequently found in simple hyperplasia of the adrenals, but the absolute and relative increase of the β group of 17-ketosteroids is associated with adrenal tumour and has been used as an important point in differential diagnosis by Crooke and Callow[2] and particularly in the diagnosis of malignant tumours. Their findings are supported by the more detailed analysis of Mason and Kepler.[10]

The second group contains the data relative to carbohydrate metabolism. The ability to utilize glucose was impaired to such a degree that the blood sugar level rose above the renal threshold and had fallen only very slightly two hours after the ingestion of the test dose of glucose. In 1939, Shephardson and Shapiro[6] reviewed the clinical entity of diabetes of bearded women and by applying the three original criteria of Achard-Thiers,[11] namely, adrenal tumour, hirsuties and diabetes, to the cases reported in the literature, found only seventeen which fulfilled these requirements. The complete syndrome may therefore be considered a comparatively rare form of virilism. An examination of the biochemical findings in the seventeen cases which they accepted shows that in five of them, namely, those reported by Keyser and Walters,[12] Strauss,[13] Winkel,[14] Broster Hill and Vines,[9] and Bottin,[15] the diabetes was of mild degree with the fasting blood sugar content falling within the normal range in untreated cases. Four of the five patients in these cases died from malignant tumour of the adrenal, two of them within a few days of operation, and one shortly after a spontaneous abortion. The patient in the case here reported resembles this group of patients; had she come under observation at a later stage in the clinical course of her condition,

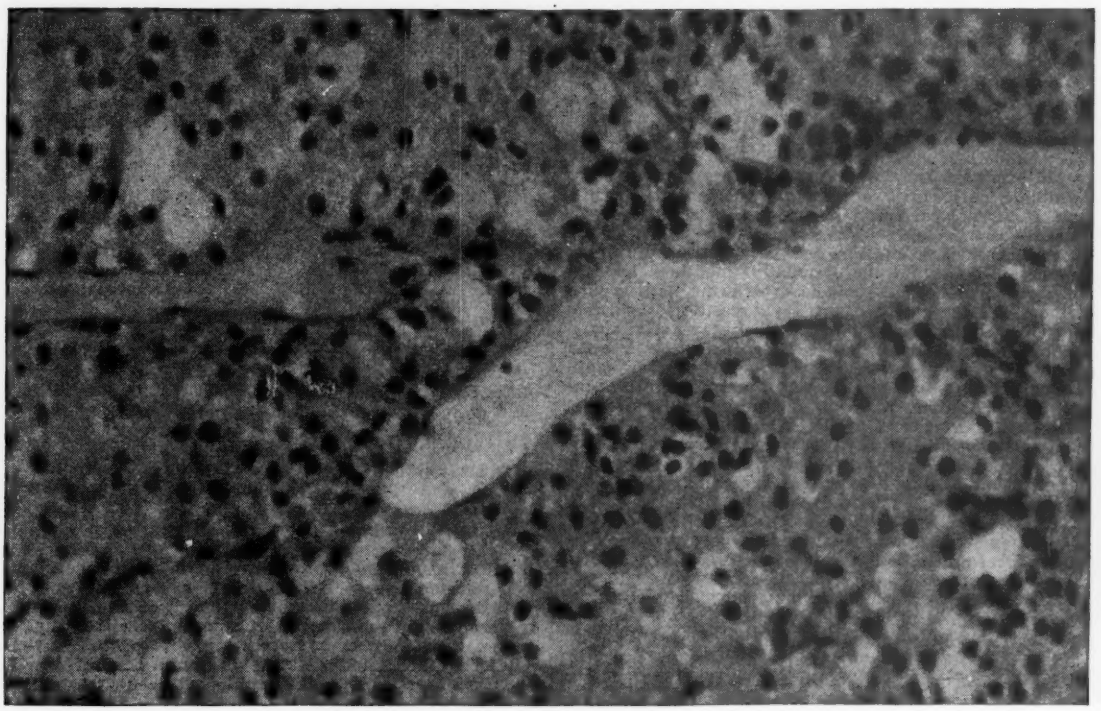

FIGURE I.

It is regrettable that our own patient's appearance was not recorded photographically and that no autopsy was permitted. The absence of obesity, of enlargement of the clitoris and of osteoporosis may perhaps be explained by the rapidity of growth of the tumour. Cahill[6] states that obesity occurs more often with the less malignant tumours. The moderate but variable degree of hypertension has little diagnostic significance, as a tumour of this size must inevitably invade and disturb the adrenal medulla.

It is obvious from this and from similar post-operative catastrophes that special precautions are necessary following removal of an adrenal tumour for Cushing's syndrome, if the grave and frequently fatal post-operative shock is to be successfully overcome. Particular care is necessary to anticipate and combat hypochloræmia, oligæmia, and hypoglycæmia. At the onset of collapse, intravenous glucose and saline infusion, blood transfusion, and administration of large amounts of adrenal cortical extract are called for. According to Broster and Hill[9] no such shock follows unilateral adrenalectomy when hyperplasia and not tumour exists.

her carbohydrate tolerance might have been still further impaired. The defect in carbohydrate metabolism is not primarily pancreatic in origin in these patients; there is no insulin deficiency, and insulin therapy will not control the condition. The defect arises from adrenal hyperfunction, which affects carbohydrate metabolism both directly and indirectly by upsetting the normal hormonal balance.

In the case under consideration, we have further direct evidence of alteration in the adrenal output of those hormones affecting carbohydrate metabolism, as the urinary excretion of the 11-oxysteroids was on one occasion twenty times and on a second occasion ten times greater than normal, that is 4·0 milligrammes in twenty-four hours and 2·4 milligrammes in twenty-four hours respectively. Venning and Browne[16] have reported the output of glycogenic corticoids in a variety of conditions, including five cases of Cushing's syndrome, in which the amounts varied as did also the underlying pathology of the adrenal. In four cases the patients had an increased output of corticoids, in two instances associated with impaired carbohydrate tolerance, one of these two patients being found to have an adenoma of the adrenal; no pathological anatomical findings are given for the other. Eggleston and Dobriner[17] have reported the excretion of increased amounts of corticoids in two cases of adrenal carcinoma. Talbot[5] and his group of workers report a slightly increased excretion ranging from 0·15 milligramme to 0·57 milligramme daily in two patients whom they classify as having adrenal cortical virilism, but in whom they do not specify the presence of tumour. Heard and Sobel[18] refer to Cushing's syndrome as distinct from pituitary hyperfunction, but do not actually mention adrenal pathology in their list of patients examined. Both groups of authors report increased urinary excretion of corticosteroids in pituitary virilism rather than adrenal virilism. Shephardson and Shapiro,[6] discussing in the paper mentioned above the comparative rarity of carbohydrate metabolic disorder in association with virilizing tumours of the adrenal cortex, postulate that this combination is seen when a hormone-producing tumour develops in the adrenal cortex of an individual in whom the constitutional *Anlage* of diabetes is already present. In the light of recent biochemical investigation of the urinary excretion of steroid hormones, another hypothesis might reasonably be proposed: that the hormone-producing adrenal cortical tumours may be of two functional types; in one the androgen over-production is the predominating feature, in the other there is over-production of the steroid hormones affecting carbohydrate metabolism as well as of those having androgenic effect.

Summary.

A case is reported of a patient showing the features of Cushing's syndrome. In this instance, the syndrome was due to a carcinoma of the adrenal cortex which resulted in the death of the patient from a characteristic type of post-operative shock. The tumour produced two types of hormones, namely, those responsible for androgenic changes, and those disturbing carbohydrate metabolism in a diabetic direction. It is suggested that the latter development may occur more readily in individuals susceptible to diabetes.

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A SEVERE CASE OF NUTRITIONAL ANÆMIA IN INFANCY.

By NORMAN CUNNINGHAM,
Sydney.

Clinical Record.

S.S., a female infant, aged three years and nine months, was referred by Dr. H. Selle on February 11, 1948. Her birth weight was nine pounds and her present weight two stone eight pounds. She was an only child living with her mother and her mother's mother and father. Her mother worked for the Navy. The child had attended the baby health centre regularly and had been breast fed for three months. Thereafter a half milk-half water formula had been used. Orange juice had been taken regularly, but very little cod liver oil. She had taken her feedings well until the age of two years, when she contracted whooping-cough. Since then her diet had consisted literally of three and a half to four pints of milk and one egg daily and one orange weekly. The child contributed to the history taking at this point of the interview by stating that she sometimes ate cake, but the mother said that only a few crumbs were ever eaten in a day. No meat, fish, vegetables, bread, butter or fruit had been taken in the past twenty-one months. She had sat up, stood up, crawled, walked and talked at the usual ages. The present symptoms were of vomiting, frontal headache and lack of energy.

On examination, the child was pale and lethargic and obviously ill; the only positive findings were an oral temperature of 101·8° F. and a systolic murmur at the base of the heart. A blood examination made in the surgery showed the hæmoglobin content of the blood to be 4·4 grammes per 100 millilitres (30%) and the red blood cell count 4,100,000 per cubic millimetre of blood. She was admitted to Gloucester House the same day for investigation and probable blood transfusion. On her admission to hospital, the temperature was 100·6° F., and a full blood examination showed that the red blood cells numbered

TABLE I.

Subject.	Calories.	Protein. (Grammes.)	Calcium. (Grammes.)	Iron. (Milligrammes.)	Vitamin *A*. (International Units.)	Vitamin B_1. (Milligrammes.)	Ascorbic Acid. (Milligrammes.)	Riboflavin. (Milligrammes.)	Nicotinic Acid. (Milligrammes.)
Children:									
1 to 3 years	1200	40·0	1·0	7·0	2000	0·6	35·0	0·9	6·0
4 to 6 years	1600	50·0	1·0	8·0	2500	0·8	50·0	1·2	8·0
S.S.:									
Four pints milk and one egg daily *plus* one orange weekly	1596	83·5	2·83	2·26	4042	1·0	24·6	2·4 to 6·8	1·5 to 3·0

4,440,000 per cubic millimetre, the hæmoglobin value was 5·2 grammes per 100 millilitres (36%), and the white blood cells numbered 7450 per cubic millimetre (neutrophile cells 58%, lymphocytes 39%, monocytes 2%, eosinophile cells 1%). Anisocytosis, poikilocytosis and central pallor of the erythrocytes were present. The floor sister reported that the child appeared to have dysphagia, and that solid food seemed to "stick in the throat". A suspicion was aroused that one might be dealing with a juvenile example of the Plummer-Vinson syndrome. Eight ounces of Rh-negative blood were given into the right cubital vein by Dr. G. McDonald. The child's general condition immediately improved, and on February 17 blood examination showed that the red blood cells numbered 5,490,000 per cubic millimetre, the hæmoglobin value was 8·8 grammes per 100 millilitres (60%) and the white blood cells numbered 6800 per cubic millimetre (neutrophile cells 33%, lymphocytes 63%, monocytes 1%, eosinophile cells 2%, basophile cells 1%). The administration of "Colliron" (Evans) had been commenced, in a dosage starting with ten drops three times daily and increasing to fifteen drops three times daily. "Combex" (Parke, Davis and Company) one millilitre by injection daily, vitamin *C* 50 milligrammes (one tablet) twice daily, and "Potantol" (Nicholas) ten drops three times daily, were also given. A diet rich in protein was ordered, and one tablespoon of skimmed dried milk was added to each pint of fresh milk. The dysphagia rapidly disappeared and the child willingly took a full mixed diet suitable for her age.

As the mother had to leave urgently for Melbourne on February 20, and as the hæmoglobin content of the blood was 8·1 grammes per 100 millilitres (56%), consent was reluctantly given. On her return to Sydney the patient was examined again on March 5, 1948. She was eating well and had a different attitude to life. She had no difficulty in swallowing solid foods, and was now "cleaning the plate". Her colour was good, and her heart murmur had disappeared. Her weight was now two stone eleven pounds. The hæmoglobin value of her blood was 9·5 grammes per 100 millilitres (63%). On March 26 her weight was two stone twelve pounds and the hæmoglobin value of her blood was 12·3 grammes per 100 millilitres (84%).

Recommended daily allowances for specific nutrients from the National Health and Medical Research Council, Canberra, 1946, are set out in Table I, also the intake of this child.

Comment.

An unusual opportunity was provided to investigate the nutrition of a child, aged three years and nine months, taking a fixed diet. The caloric intake was greater than needed for an infant of this age. Therefore the infant's weight level was higher than the average for her age, and so her weight increases had been satisfactory. Protein, calcium, vitamin *A*, vitamin B_1 and riboflavin intakes were adequate. Only 30% of the recommended allowance of iron was taken. Ascorbic acid intake was nearly adequate theoretically, but many experts consider the recommended allowance is too high. The League of Nations Technical Commission on Nutrition (1938) estimated the daily requirements of human adults as 30 milligrammes. Nicotinic acid intake was much below required standards, but opinions of actual requirements differ greatly.

Summary.

1. A case of nutritional anæmia following a peculiar diet in a modern city and needing blood transfusion is reported.
2. One egg daily was insufficient to prevent the development of anæmia.
3. Some similarity to the Plummer-Vinson syndrome in adults is noted.
4. Rapid improvement followed blood transfusion.
5. The nutritional and vitamin requirements for an infant of this age are set out and compared with the intake of this infant.

Acknowledgements.

Thanks are due to Dr. Edgar Thomson, Dr. G. McDonald and Dr. I. Filshie for typing the blood and giving the blood transfusion, and to Miss J. Rogers, chief dietitian at the Royal Prince Alfred Hospital, for her assistance in preparing the nutrition tables.

Reviews.

RECTAL SURGERY.

W. B. GABRIEL again graces the pages of surgical literature, this time with a fourth edition of "The Principles and Practice of Rectal Surgery".[1] The value of this work is enhanced by the inclusion of a chapter on anal incontinence and by the fact that the author's work on malignant disease, particularly on malignant disease of the rectum, has been brought up to date. In this particular section Cuthbert Dukes, who has made a life-long study of cancerous growths, gives some valuable information.

The death of Roscoe Graham, of Toronto, is deplored, and surgeons who had the pleasure of meeting him and of seeing his work will join with the author in his expression of sympathy. The book complies with the war-time economy standard, but no complaints will be found with the quality of the paper, the drawings, photographs and coloured plates. No stone has been left unturned to inform the reader of all there is to know about the rectum. The surgical anatomy is extremely well presented and surgeons will gain some comfort from learning that the subcutaneous external sphincter may be cut with impunity—and sometimes even with benefit to the patient. We read of rectal stalks, but not of Elliott Smith's outstanding work in elucidating them. Quite a novel departure is made by placing to face page 54 the schedule to be carried out on the rectum—before and after operation—on a sheet that can be torn out without damage to the book.

To some readers it would appear far-fetched to blame general anæsthesia for the severe swelling and œdema at the anus so often met after operations in this region.

A chapter of forty pages is allotted to the distressing condition hæmorrhoids. In the past three years, of one thousand patients examined by Mr. Gabriel approximately 30% were rejected as being unsuitable for injection treatment. In regard to prolapse of the rectum a very important point is raised, namely, that in an alleged case of prolapse

[1] "The Principles and Practice of Rectal Surgery", by William B. Gabriel, M.S. (London), F.R.C.S. (England); Fourth Edition; 1948. London: H. K. Lewis and Company, Limited. 9¼" × 5", pp. 524, with 278 illustrations. Price: 45s.

no operation should be performed unless the prolapse has been seen by the surgeon.

The main chapter on anal incontinence is very informative, and the cause of the occasional incontinence after Whitehead's operation is explained.

Fine stainless steel is advocated as the most satisfactory suture material for the repair of torn sphincters.

With all the advances in surgery that have taken place in recent years, it is interesting to find the author using Lawson Tait's operation, described first in 1874, as the most suitable procedure for small perineal tears involving the anal sphincters. The bold assertion is made that division of the subcutaneous external sphincter is an essential part of the radical cure of anal fissure. The use of blunt-pointed instruments is recommended for the cure of *fistulæ-in-ano* by laying them open, but surely complete excision of fistulæ by a sharp scalpel is more satisfactory. Pilonidal cysts are dealt with in the chapter devoted to *fistula-in-ano*. Pilonidal cysts are generally considered definite clinical entities and the surgeon is fortunate to eradicate them at the first operation, while healing by first intention is a rarity.

The intimate relationship between adenomata and cancer of the rectum is stressed, also the fact that rectal polypi are a common origin of rectal cancers.

In the author's series of 660 perineo-abdominal excisions, double or multiple cancers of the rectum or of the rectum and pelvic colon were present in 31 cases, or an incidence of 4·7%, which the author remarks is a weighty argument for combined excision of the rectum.

In 2118 biopsies taken before operation Cuthbert Dukes established a correct diagnosis in over 99% of cases.

With the revival of local excisions and restoration of the continuity of the bowel in cancer of the rectum the following statement is significant: "On rare occasions a small early carcinoma has been cured by some form of local resection, but there is no doubt that a radical operation for excision of the rectum is best and the most generally applicable treatment in operable cases."

The author considers that the operation should be carried out when possible in one stage.

The perineo-abdominal operation as practised by the author is fraught with great danger in the presence of a preliminary colostomy, a danger which does not exist with the abdomino-perineal method as advocated by the late Ernest Miles. The author, combining male and female patients, had had an operability rate of 70% and a mortality rate round the 10% mark, which speaks volumes for his methods. On the other hand a preliminary colostomy, which may be necessary for many weeks, will enable the patient's resistance to be built up in a way that no other method can achieve, and by its use, a greater operability rate may be obtained and even a lower death rate than that quoted above.

An excellent book is rounded off with chapters on cancer of the anus and anal canal and sarcoma of the rectum. This is a work that commends itself to specialists and general practitioners and will be enjoyed by all seeking knowledge of diseases affecting the rectum from the simplest to the most advanced.

MEDICAL MYCOLOGY.

NINE years ago we reviewed favourably the first edition of "An Introduction to Medical Mycology" by George Lewis and Mary Hopper, of Cornell University Medical School.[1] This work was first published "with some temerity" the authors write in their preface in 1939, and the fact that a third edition has been called for within nine years is a sufficient indication of its value. In the present volume they hope that they have sufficiently abstracted the many advances in medical mycology since 1943 without adding greatly to the length of the book. Its main purpose was to serve as a primer, not to go into "controversial details and involved technical aspects". The preface also calls attention to the fact that pathogenic fungi are rarely found on the normal skin and do not thrive in the presence of acute inflammation; hence the significance to be attached to finding them in an inflammatory condition. Since 1939 the authors' laboratory has been in the New York Hospital.

This "Introduction" has still a strong dermatological bias, as indeed might be expected. Thus under "The Deep Mycoses (Essentially or Potentially Systemic)", actinomycosis, mycetoma, nocardiosis (actinomycosis without granules) and torulosis, together with sporotrichosis (which does not seem to have been recorded yet from Australia), blastomycosis, histoplasmosis, coccidioidomycosis, aspergillosis *et cetera* and mycoses of the lungs are considered from the clinico-pathological side in 44 pages. This section is preceded by a full account of the various ringworm and related fungi under the heading of the "Superficial Mycoses", consisting of 130 pages dealing with this same aspect and 30 pages later on in Part II describing the organisms concerned. These various mycoses and their causes are beautifully illustrated by over one hundred illustrations, two in colour. Other sections in Part I deal with the physiology of fungi (just an epitome); the methods of diagnosis; immunity, cutaneous sensitization and allergic manifestations; and compensable dermatoses (short). Part II is concerned with laboratory methods. It includes sections dealing with precautions against laboratory infections; the collection of material; the direct examination for fungi of hair, scales, pus, sputum and so on; dubious fungous forms and artefacts; cultural methods; animal inoculation; technique of passive transfer test; testing of fungistatic and fungicidal substances; filtered ultra-violet radiation (Wood's light); the trichophytin and other specific skin tests; the characteristics of the pathogenic fungi themselves with that of some common contaminants likely to be confused with them. The book has a special claim on the attention of the dermatologist and clinical pathologist, and the country practitioner should find it of value in diagnosing and treating parasitic skin conditions that sooner or later come his way.

[1] "An Introduction to Medical Mycology", by George M. Lewis, M.D., and Mary E. Hopper, M.S.; Third Edition; 1948. Chicago: The Year Book Publishers, Incorporated. 10" × 7", pp. 392, with 103 illustrations, some of them coloured. Price: $8.50.

SPEECH AND VOICE CORRECTION.

IN "Twentieth Century Speech and Voice Correction", edited by Dr. Emil Froeschels, we are presented with a concise, yet comprehensive, survey of the anatomy, physiology and ætiology of speech, and modern techniques of treatment for specific defects.[1]

No less than nineteen specialists in this field have made valuable contributions, and whilst there is some divergence of opinion expressed by the writers on some subjects, they have presented sound arguments to support their theories and therapeutic measures. This book cannot fail to serve as a stimulus to everyone scientifically and practically interested in the speech and voice problems of mankind, both of psychic and of organic origin.

Almost every type of speech and voice disability is presented and discussed with clarity and understanding, and at no time are the concomitant psychological factors overlooked.

At the present time when we are confronted with the problems of speech education for the rubella child there is much to arrest our interest in the papers "The Education of the Deaf Child" and "Acoustic Education in Children". The former sets out a convincingly practical and sympathetic scheme for equipping the deaf child to cope with his handicap. The writer stresses the necessity for planned education from nursery school age, this education to include speech and lip reading, and adds: "An additional argument favouring the early development of speech points to the fact that the muscles of articulation and the intrinsic muscles of the larynx are at their most pliable and plastic state during these early years. Speech is one of the finest of muscular co-ordinations, and in order that any muscles function to their maximum efficiency, both practice and correct use are essential. The deaf child, therefore, needs to learn to use his speech muscles correctly and at an early age."

In "Voice Training after Laryngectomy", the advantages of œsophageal speech over that produced by the aid of an artificial larynx are weighed, "the resulting vocal tone is much more natural than that produced by an artificial larynx. The quality is less harsh and metallic, and with training, voiced and unvoiced sounds can be produced and combined more naturally. Then, too, an artificial larynx is conspicuous, requires care and leaves the patient without speech when it is in disrepair or otherwise not immediately available".

During World War II nineteen specially designated neurology-neurosurgery centres were established throughout the United States to cope with disorders of articulation due to gunshot wounds of the head and neck. This chapter sets out the various disorders resulting from these casualties and the methods of examination, surgery, therapy and rehabilitation. Not one of the more commonly encountered speech or voice defects has been overlooked in this thoroughly useful book, which also includes a provocative chapter on "Remedial Reading and General Semantics".

[1] "Twentieth Century Speech and Voice Correction", edited by Emil Froschels, M.D.; 1948. New York: Philosophical Library. 8½" × 5", pp. 336, with illustrations. Price: not stated.

The Medical Journal of Australia

SATURDAY, JULY 23, 1949.

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AIR TRAVEL AND MEDICAL FITNESS.

THE war of 1939–1945 had a great deal to do with the tremendous advance of recent years in commercial aviation. The zeal and heroism that were displayed in air-force combat in the war of 1914–1918 laid a foundation on which post-war aviators built. Australia, situated in the Southern Hemisphere, had every reason to take a lively interest in the early flights that were made between Great Britain and Australia, and it seems only the other day that the late Charles Kingsford Smith and his three companions flew in the *Southern Cross* from the United States to Australia. Nowadays the flights of the pioneers are repeated almost every day and safety is taken for granted. Improvements in aircraft design and the perfecting of auxiliary devices and equipment have been conspicuous, and there is no doubt that the popularity of air travel will increase still further. The Australian people have been told over and over again that their country is ideal from the flying point of view and those who are accustomed to travelling by air between different State capitals, even if they know nothing of the technical side of aviation, will probably agree with the statement. The distance of Australia from Britain and America, the comfort of air travel and the advantages of the exchange of views in conferences and other meetings have combined to make journeyings by air essential to representatives of governments and of scientific and commercial bodies. With this widespread use of air services the problems of health must sooner or later arise. During the Second World War members of the services who were called upon to fly were generally in good health, but in the sudden changes of altitude to which they were subjected there were some who, to say the least, were far from comfortable. When all and sundry in the community essay to fly, often on long distances, it is to be expected that distress of varying degrees will be manifest.

This subject has recently been brought to our notice by a letter from Air-Commodore E. A. Daley, Director-General of Medical Services of the Royal Australian Air Force. He points out that a great number of persons of widely varying age groups are making use of air transport. Among these are a number of persons of more than fifty years of age, for example, business executives and others, who for one reason or another have been under the care of a medical practitioner. Inquiries in regard to fitness for air travel from the medical point of view are often made to the Medical Directorate of the Royal Australian Air Force and advice is given whenever possible. Air Commodore Daley has requested that the attention of Australian practitioners should be drawn to this subject and in particular to an article on medical fitness for air travel which appeared in the *British Medical Journal* of April 9, 1949. Every member of the British Medical Association in Australia receives the *British Medical Journal* and in ordinary circumstances it should be sufficient to invite members to study the article. However, since the subject is of great importance and the article may have been missed by the busy practitioner, it will be useful to indicate its scope and to draw attention to some of its more striking features. To begin with the authors can speak with authority—Sir Harold Whittingham is a retired Air-Marshal and is Director of Medical Services of the British Overseas Airways Corporation, A. Buchanan Barbour is Chief Medical Officer of the British European Airways Corporation and J. C. Macgown is the medical adviser to the British South American Airways Corporation. The essence of the article is a table dealing with the medical contraindications to air travel. In one column are named the several conditions dealt with, in the second column the limiting factors are stated, in the third the essential facilities and precautions in flight are set out and in the fourth is the conclusion in regard to the advisability of travel by air. The table contains advice which is given "in general terms" and is particularly applicable to flights of over four hours' duration in public air transport flying at altitudes between 5000 and 9000 feet and for short times at 15,000 feet or above to circumvent a bad weather front or to avoid high ground. We are told that when a decision is required every case must be assessed on its merits. The following points must be borne in mind: (i) the medical condition and psychological make-up of the patient; (ii) the effect of the patient's disability on other passengers; (iii) the necessity or otherwise for a qualified attendant to travel with the patient; and (iv) the conditions of air travel—that is, (*a*) the type of aircraft, particularly whether it is pressurized or not; (*b*) the length of the journey envisaged and the duration of the various stages; (*c*) the expected weather conditions at the time of the year, and the altitudes likely to be attained; (*d*) the availability of oxygen.

One or two of the general statements may be recorded. Persons with cardiac and pulmonary lesions are apt to react badly to effects of low pressure, even at altitudes below 10,000 feet, particularly those who have had attacks of *angina pectoris* or coronary occlusion, as well as cardiac and renal asthmatics, chronic bronchitics and those suffering from pulmonary tuberculosis (especially those who have had artificial pneumothorax induced). Patients with pulmonary tuberculosis should not travel by air unless their sputum is free from tubercle bacilli and any cavity is controlled by collapse therapy, but not within a week of receipt of a refill. The altitude of the flight should never exceed 5000 feet and oxygen should always be available for use. Those suffering from *angina pectoris* should have the condition adequately controlled and an electrocardiogram should be prepared to exclude infarction; such persons can be accepted if the angina is provoked only by

a brisk walk of half a mile. A full statement is made about diabetics, but the general direction is that when the level of the fasting blood sugar is higher than 250 milligrammes *per centum* they should not travel for long distances by air or at altitudes greater than 8500 feet. Elderly persons travel well at altitudes up to 10,000 feet, provided they are free from organic disease; it is advisable that oxygen should be available for them and that when possible they should travel in a pressurized aircraft. Expectant mothers should undergo a medical examination and obtain advice before undertaking an air journey. Finally, children, infants and babies travel well by air, but need oxygen at the same altitudes as healthy adults do.

It is necessary to remind medical practitioners that the advice given by Whittingham and his fellow authors and the opinions expressed by them are not put forward as statements which should be slavishly followed. They write "in general terms" and insist that "every case must be assessed on its merits". Australian doctors in dealing with this subject will have in mind two kinds of air travel—the long distance flights to Britain, America and other far-off countries, and flights within the Commonwealth. On flights of the first kind pressurized planes fitted with oxygen are used and it should not be difficult to decide whether an individual is fit to make an air journey. In regard to flights within Australian boundaries, not many of the regular schedules of the several companies are of more than four hours' duration and we have been given to understand that an altitude of more than 10,000 feet is not often required. The flight from Adelaide to Perth takes a good deal more than four hours; altitudes of 9000 to 10,000 feet are attained and some apparently normal people in these circumstances require oxygen. Though Australia is well supplied with aircraft, few pressurized planes are available. The apparatus for pressurization has not been generally used on the aircraft that are equipped with it. Oxygen is part of the standard equipment of the planes travelling long distances. On some of the smaller planes on the shorter journeys oxygen is not carried unless the management is notified beforehand that it is likely to be needed. With these facts in mind and with the views of Whittingham, Barbour and Macgown before them, medical practitioners should be able to give a reliable opinion in regard to the advisability of journeyings by air for any of their patients, particularly if they have been the regular attendants of these patients.

Current Comment.

INJURIES AND DEATH FROM LIGHTNING.

INJURY or death from lightning would not usually be thought of as a hazard of football, but it has recently been recorded in this way by M. J. G. Lynch and P. H. Shorthouse.[1] During a soccer match between two army teams a fork of lightning struck a group of players, who fell instantly to the ground, and the other players also fell as if in sympathy. After a few seconds most of them got slowly to their feet, but four or five remained motionless on the ground. Shorthouse, who was present, found, when he reached the men, that two were dead—pulseless and livid, their conjunctivæ suffused and their pupils in the cadaveric position; they had been within six inches of one another. The referee, who was ten yards from the dead men, had not lost consciousness but had found himself prostrate with loss of power in the legs and right arm and a sensation of being suspended in the air by the neck. He was shocked, with flaccid paralysis of both legs and the right arm, the paralysis gradually disappearing during the next sixteen hours. He had two small "burns", one on each foot. Another player, who was five yards from the dead men, had felt as if hit on the head; he fell and tried to rise, but again felt as if hit on the head, fell and lost consciousness. On regaining consciousness after two minutes, he could not speak. He was shocked, but revived quickly and in half an hour could speak again. Other survivors were not examined as attention was concentrated on the attempted resuscitation of the two apparently lifeless players. Artificial respiration, by the Schäfer method and then in the Drinker apparatus, and "Coramine" failed to revive them. Post-mortem examination was carried out—a detailed description is given in Lynch and Shorthouse's paper—and extensive keraunographic markings (filigree or arborescent burns) were found. Within both bodies hæmorrhages were numerous and widespread, the most notable site being the pancreas, which had diffuse hæmorrhage into the caudal two-thirds and histologically was found to have undergone necrosis. Another significant site of hæmorrhages was the floor of the fourth ventricle. A great variety of effects have been found *post mortem* by other investigators whose findings are analysed by Lynch and Shorthouse and as much variety appears to have been shown in assessing the significance of these effects. Of interest in relation to the cause or causes of changes seen in the brain is the quoted statement of Critchley that "probably the blood-vessels constitute the main routes for the passage of currents [in lightning or electric shock] through the brain, and many of the changes found at autopsy are explicable on the basis of a primary vascular lesion". The effects of lightning and electric shock on the central nervous system are discussed at length in the light of the work of a number of investigators; they have been grouped into immediate effects (shock, unconsciousness and suspended animation), secondary effects (temporary nervous disorders, visual disturbances, burns and gangrene) and various remote and often rare effects. The basic elements in the production of injury by lightning flash are stated to be first, the direct effect of the current, second, superheated air or other objects traversed by the current and, third, the expanded and repelled air. It is evident that much thought and work have been expended on this subject of lightning stroke and the results make interesting reading. However, it is not perhaps surprising that some aspects of the matter are not clear and that the ultimate factors responsible for death and injury remain elusive.

[1] *The Lancet*, March 19, 1949.

"ATEBRIN" IN RELATION TO SKIN DISEASE.

IN a discussion in these columns on November 1, 1947, of "Atebrin" in relation to skin disease, we reviewed a number of papers by American dermatologists in which the ætiological importance of "Atebrin" in the occurrence of atypical lichenoid dermatitis and of eczematoid and exfoliative types of dermatitis was either supported or minimized. It was considered then that the majority, though not all, of those in the position to express an opinion supported the causative role of "Atebrin". The comment was made that as the day of "Atebrin" had probably passed with the introduction of newer antimalarial drugs, the main points on the controversy were worth recording, if only as a matter of general interest and perhaps to close the subject. However, it seems that the subject is not closed. C. L. Schmitt,[1] of the University of Pittsburgh School of Medicine, has reported six cases of dermatitis as examples of residual or recurrent skin affections which in their original form were, at least in part, caused by intolerance of "Atebrin". He reviews the clinical features of two types of dermatitis which he saw

[1] *Archives of Dermatology and Syphilology*, January, 1949.

in the south-west Pacific area during the war, and which he attributes to intolerance of "Atebrin"; they were the well-known atypical lichenoid condition and an eczematoid form which, he asserts, occurred at least ten times as frequently as the lichenoid form. Apparently many of those affected during the war are now suffering from conditions ranging from irritability and sensitivity of the skin to frank eczematoid dermatitis. Patients cited include a doctor whose hands will not tolerate scrubbing, and a nurse who has been unable to resume her profession because of sensitivity even to ordinary soaps and water. According to Schmitt, recurrence of the lesions and involvement of different regions long after administration of "Atebrin" has been stopped "probably indicate that a specific eczema has become a nonspecific one". He quotes a personal communication from C. S. Livingwood, former dermatological consultant to the Surgeon-General, in which Livingwood states that he has a strong feeling "that one of the things which quinacrine did to the skin was to broaden the allergic base . . . persons became sensitive to contactants, food and other allergens after they had acquired a cutaneous reaction to quinacrine". He (Livingwood) feels that "literally hundreds of persons now have various types of chronic eczematous eruptions only because they had quinacrine dermatitis during the war, and that some of them will continue to have recurrences despite the fact that they may never use quinacrine again"; he quotes examples of similar sensitizing of the skin resulting from other agents. All of this is interesting and both Schmitt and Livingwood seem to have made a case for the contention that non-specific eczema may follow specific eczema due to "Atebrin", perhaps even more frequently than that resulting from other causes. They do not make clear, however, how a decision can be made in any individual case—a matter of no little interest both to the ex-serviceman and to repatriation authorities. It seems likely that in many cases the position cannot be determined with certainty, and that possibility must be faced. Some dermatologists will probably not accept these American opinions in their entirety and some may disagree with them completely. Nevertheless, they should be known and at least considered in the assessment of the position of ex-service men and women who, while taking "Atebrin", suffered from skin affections of the type discussed and whose livelihood is now threatened by skin sensitivity to factors in their working environment.

FOOD AND FERTILITY.

A CONFERENCE of the British Nutrition Society held last March had as the object of its discussions the causal relations between nutrition and fertility. The proceedings of this conference, if published *in extenso*, might add materially to our knowledge, but the condensed reports which have arrived give the impression of a large number of really unrelated addresses, each speaker or reader of a paper devoting himself to one aspect of the problem irrespective of the views of his colleagues. In fact teamwork was apparently absent.[1] Our opinions on this topic have undergone considerable change since Buckle in 1857 brought out the first volume of his "History of Civilization in England". In this book, after some lamentably bad physiology, he postulated a direct relationship between food and birthrate. "One acre of average land sown with potatoes will support twice as many persons as the same quantity of land sown with wheat." He then triumphantly announced that the population of potato-fed Ireland increased annually 3%, whereas that of wheat-fed England in the same period increased only 1·5%. Later in the same book Buckle stated that an area planted with bananas would support 25 times the number of human beings as the same area sown with wheat, but he quite omitted to mention whether the increase of population of banana-fed people was or was not twenty-five times that of England! Living before the era of medical science inaugurated by Pasteur, Buckle had no idea of the cause of epidemic and endemic diseases and his neglect of this factor as well as of the true principles of nutrition, not to speak of birth-control methods, vitiates his conclusions. At the British Nutrition Society conference, Dr. G. I. M. Swyer directed attention to the seeming paradox that in China and India and the East generally there is a high birth rate with expanding population associated with poverty and undernourishment, whereas in Europe and America the opulent and well fed have a lower birth rate and a smaller increase of population. The same contributor emphasized a fact already well known amongst farmers and pastoralists, namely, that in the mammal starvation and over-feeding both reduce fertility. "Gross undernourishment results in amenorrhœa and menstrual disorders and a fall in conception rate. Over-nourishment and obesity are commonly associated with infertility in women." This latter statement may be compared with the following from the text-book of veterinary physiology by F. H. A. Marshall and E. T. Halnan:[1] "Adiposity is a common cause of sterility and animals unduly fattened for show or sale are frequently barren at any rate temporarily." As is well known among pastoralists, "flushing the ewes" with extra feeding hastens the sexual season and increases the number of ripe follicles available for ovulation. Again, in pig-raising centres extra food in the sow has often brought about five litters in two years. So it seems that in farm animals good nutrition, if not pushed to an undue extreme, will increase fertility.

Amongst interesting facts and conclusions presented at this conference are the following. Vitamin *A* deficiency kills the fœtus as a secondary effect of placental death, whereas vitamin *E* deficiency acts mainly on fœtal hæmatopoietic organs. A high plane of nutrition may bring on puberty earlier, but the weight of the animal at puberty is increased; on the other hand, under-feeding postpones the onset of puberty, which occurs at a lower body weight. In this case pregnancy and lactation tax the under-grown mother very considerably. Immature ovaries implanted into adult females function at once; but mature ovaries implanted into immature females must await puberty before functioning. Obviously factors outside the gonads are at work and the probability is that the anterior lobe of the pituitary is responsible. There is already some evidence that nutritional factors influence anterior pituitary activity. The main lesson to be derived from this conference is, as the contributors would themselves willingly confess, that the gaps in our knowledge of the relationship between food and fertility are unfortunately still very numerous.

[1] Arthur Walton: "Nutrition and Fertility", *Nature*, April 16, 1949, page 593.

STREPTOMYCIN IN THE TREATMENT OF ACTINOMYCOSIS.

THE treatment of actinomycosis has always presented rather a problem, though penicillin and the sulphonamides have been found to be of value. A number of reports are accumulating of treatment with streptomycin and the results are encouraging. An early report was that of J. P. Costigan,[2] who obtained apparent arrest of actinomycosis of a cervical gland after five days' treatment with streptomycin, though penicillin and sulphonamides had been ineffective. Last year J. R. Jacobson and R. B. Cloward[3] reported what they believed to be the first verified case of actinomycosis of the central nervous system in which recovery occurred. The diagnosis was made on the detection of Actinomyces in the cerebro-spinal fluid. Intensive treatment with sulphadiazine, penicillin and streptomycin resulted in a complete clinical recovery. It is difficult to evaluate the part played by the individual drugs in the result, but the record suggests that the contribution of streptomycin was at least significant. Two reports by British investigators have now appeared simultaneously.[4] J. A. Torrens and M. W. W. Wood used streptomycin therapy in three cases of actinomycosis with satisfactory

[1] "Physiology of Farm Animals", Third Edition, 1945, page 251.
[2] *The Journal of the Canadian Medical Association*, April, 1947.
[3] *The Journal of the American Medical Association*, June 26, 1948.
[4] *The Lancet*, June 25, 1949.

results. In two cases streptomycin produced a striking and rapid improvement and later arrest of the disease, although penicillin, sulphonamide and potassium iodide had failed; one of the patients had an extensive infection involving many organs and areas of the body, and the other had osteomyelitis of a vertebra as well as involvement of the cervical lymph glands and of a lung. The third patient had an actinomycotic abscess of the pelvis with a discharging sinus in the left loin; treatment with streptomycin alone stopped the progress of the disease and brought about healing of the sinus, disappearance of the abscess and recovery of the patient. The course of streptomycin used in these three cases lasted for three months; a daily dose of two grammes was given intramuscularly in four divided doses for the first month and one gramme was given daily for the second month. In the last month two patients received one gramme daily, and the third patient (whose weight was only half that of the others) received 0·5 gramme daily. Torrens and Wood point out that the optimal dosage of streptomycin in these conditions is not yet known, but their results indicate that the course should last three months. They recommend that the dose for patients of average weight should be two grammes daily for the first four weeks and then one gramme daily to a total of twelve weeks; the drug should be given in four divided doses each day for the first two months and may be given twice daily in the last four weeks if improvement is adequate. Weekly charts of weight and of the erythrocyte sedimentation rate were found to be of great assistance in assessing the progress of the infection and its treatment. The other report, presented by H. S. Pemberton and W. R. Hunter, deals with a case of intestinal actinomycosis. The patient had undergone resection of part of the ileum and colon, which was involved in a tumour; the pathologist made a diagnosis of actinomycosis. Treatment with penicillin and iodides produced only temporary improvement, but streptomycin therapy by mouth was followed by rapid improvement and apparently complete recovery. It is pointed out that oral therapy is indicated in a condition of this type, as streptomycin is not inactivated by the gastric or intestinal contents and is absorbed, if at all, in only very small amounts from the intestine. However, Pemberton and Hunter raise the point that, given by mouth, the drug may not reach some foci of infection, and they suggest that it would be wise to add parenteral administration to the oral therapy. Their single case is, of course, insufficient basis for generalization, but the clinical record is convincing as far as it goes. This applies to all the cases cited and, though the whole series is yet small, we may well hope to find these striking results verified by other workers.

MOTION SICKNESS.

THE main standby in the treatment of motion sickness for a good many years has been hyoscine. A further war-time discovery was the thiobarbiturate known as V12. We referred in these columns on August 2, 1947, to the Canadian Motion Sickness Remedy, which contained hyoscine, hyoscyamine and V12, and until recently this seems to have been the best available help for sufferers from seasickness or airsickness. Now those pharmaceutical Pooh-Bahs, the antihistamine drugs, have been pressed into service in this field with rather striking results. M. B. McEvedy,[1] following up a chance observation that patients in a ship's hospital who were under treatment with anti-histamine drugs seemed unaffected by seasickness, carried out a comparison experiment with "Anthisan" (pyranisamine maleate) and hyoscine. "Anthisan" appeared to be at least as acceptable as hyoscine to those liable to be seasick, and is free from certain disadvantages and dangers associated with hyoscine. Subsequent experience has convinced McEvedy that "with the aid of this remedy and a strong friend, almost all seasick patients can be got up on deck—even when hyoscine has failed". At the onset of seasickness the patient should lie flat for half an hour and take 100 milligrammes of "Anthisan". When this has taken effect he should get up; while the sea remains rough he should eat light meals, restrict fluids and keep warm. "Anthisan" (100 milligrammes) should be taken three times a day as long as necessary. However, McEvedy feels that enthusiastic treatment is as essential as medicine and warns against the giving of drugs to patients before they feel ill. Thus he recognizes the strong psychological element present while feeling confident of the value of the drug.

Much more impressive results, however, have come from America. L. N. Gay and P. E. Carliner[1] of Johns Hopkins Hospital and University, Baltimore, have been studying the effects of "Dramamine" (β-dimethylaminoethyl benzohydryl ether 8-chloro-theophyllinate). During trial of the drug in the treatment of hay fever and urticaria it was found to provide consistent and complete relief to a woman who had suffered all her life from car sickness. A controlled experiment was then carried out on 485 soldiers in an army transport ship during a rough passage across the Atlantic. Half the men were given "Dramamine" or a placebo of lactose at the time of departure from New York Harbour; the other half were given "Dramamine" or a placebo two to twelve hours after the onset of symptoms of seasickness. Adequate control groups were given a placebo. The dose of "Dramamine" was 100 milligrammes every five hours and before retiring. "Dramamine" prevented seasickness in all but two of the 134 men occupying one compartment of the ship; a placebo failed to relieve the symptoms in all controls who developed "true seasickness" in an adjacent compartment. However, the control group (34 men) obtained complete relief of symptoms within one hour after the first dose of "Dramamine" was administered. In two other adjacent compartments the drug completely relieved 14 men in one compartment who developed symptoms three hours after the ship left port; a placebo failed to relieve 14 men in the other compartment, but "Dramamine" brought complete relief when substituted for the placebo. Elsewhere on the transport 195 men developed severe seasickness and 187 of these derived complete relief from "Dramamine" within half an hour. Relapse followed substitution of a placebo, the symptoms responding again to "Dramamine". Altogether on the voyage 372 of 389 men with seasickness were completely relieved of symptoms within one hour after the first dose of 100 milligrammes of "Dramamine"; 17 derived only partial or no relief. A dose of 100 milligrammes taken every five hours and before retiring was effective; when necessary the drug was given *per rectum*, with completely satisfactory results. No undesirable reactions were experienced in any case. The results are difficult to criticize adversely and must be regarded as impressive. A preliminary report by B. A. Strickland and G. L. Hahn published in the same journal indicates that "Dramamine" also decreases the incidence of airsickness.

[1] *The Lancet*, May 14, 1949.

PENICILLIN AND THE PREVENTION OF SYPHILIS.

THE introduction of penicillin has transformed the outlook on the treatment of syphilis, particularly in its early stages, though it is generally recognized that final judgement on any form of treatment of syphilis cannot be made until a period of many years, indeed an average lifetime, has passed. However, despite undeniable failures, results obtained so far are encouraging, and, as is pointed out by F. W. Reynolds[2] in a comprehensive analysis of the results of the penicillin treatment of early syphilis, penicillin has distinct advantages over other forms of treatment in relation to convenience of administration and toxicity. Taking advantage of the relative ease and effectiveness of penicillin therapy, L. J. Alexander and A. G. Schoch[3] have moved its application back a further stage and have used it as a preventive measure or, perhaps more correctly, as abortive treatment. Since November, 1946, they have been

[1] *Science*, April 8, 1949.
[2] *The American Journal of Medicine*, November, 1948.
[3] *Archives of Dermatology and Syphilology*, January, 1949.

treating persons known to have been in contact with individuals who had infectious syphilis, in an attempt to prevent the development of the disease in those persons, to reduce the spread of the disease to others, and to reduce the incidence of reinfection. For such a purpose the treatment needed to be simple, inexpensive, safe and effective; the form finally adopted consisted in the administration of 900,000 units of penicillin calcium in oil and white wax U.S.P., three millilitres of bismuth ethylcamphorate in oil, and 0·05 to 0·06 gramme of oxophenarsine hydrochloride, the whole treatment being given at one visit to the clinic. A total of 148 persons who had been recently exposed to syphilitic infection were treated in this way and the results were compared with those obtained in a control group of 161 persons similarly exposed but not treated; observation was continued for eighteen months. Of those treated, six only developed early syphilis, one after two months, three after four months, one after eleven months and one after fourteen months from the time of treatment; the evidence available indicates that three of the patients who developed syphilis had been certainly reinfected, and this was also probably true of the other three. Of the controls, 100 (62·1%) developed early syphilis. Six persons who were exposed to infectious syphilis a second time were again treated with apparently complete protection.

The results in this paper are certainly striking, the highlights being the high incidence of infection in the control group and, of course, the remarkable efficacy of the preventive or abortive treatment. As might be expected, a lively discussion followed the reading of the paper before the Section of Dermatology and Syphilology at the Ninety-Seventh Annual Session of the American Medical Association in June, 1948. There was a considerable degree of praise for the enterprise and courage of Alexander and Schoch in their approach to the subject, but also much criticism. The desirability was questioned of instituting treatment for syphilis before the appearance of symptoms—in other words, mass treatment of a mixed group, some infected and some not infected; the possibilities were raised of psychic trauma, syphilophobia, unjustified expenditure and medico-legal complications attendant on treatment for a condition which might not exist at all. Several speakers thought the incidence of infection in the control group high in the light of their own experience. It was pointed out that patients given preventive treatment would still need to be checked at regular intervals so that in that respect no time or trouble would be saved as compared with the regular checking of exposed persons to ensure early diagnosis if infection had taken place. Further, it was suggested that the treatment was essentially that of early syphilis and that it might be just as satisfactory if deferred to the stage of initial clinical manifestations. Alexander in his reply did not seem dismayed by the criticism. His experience had been that the treatment laid down was not so effective for patients with early primary syphilis as for those who presumably had it in the incubation stage. He thought that it might be possible to omit the oxophenarsine hydrochloride from the treatment and so to reduce the possibility of harmful effects, but he still considered the abortive treatment justified. Few of his patients had refused it when the position was explained clearly to them. He emphasized the need for prompt and efficient investigation of those exposed to the disease, and this is important, in theory at least. One could readily paint an optimistic picture of the gradual reduction and even elimination of the disease through the prophylactic treatment of those exposed before they could infect others. In practice it is debatable whether any machinery could be evolved which would bring under investigation and treatment a sufficient number of those exposed to infection to affect materially the general incidence of the disease. One speaker in the discussion suggested that the effect of the procedure might not be any greater than that of the removal of a drop from a bucket of water. On the other hand, E. G. Clark, in a paper on the epidemiology of syphilis, discusses at some length the practical aspects of what he terms "contact investigation" and quotes many references to support his contention that such an approach is practical and productive.[1] He stresses the doctor's obligation to inform a patient with syphilis of the dangers of the disease to himself and to his contacts. This is essential if the names of contacts are to be obtained, and Clark considers that failure to participate in this manner in contact investigation is failure to assume a medical responsibility. The average doctor, Clark states, is understandably more concerned with the confidential relationship which should exist between patient and doctor than with the effect of the disease problem in the community; he finds it hard to accept measures which might shake the patient's trust in him; however, Clark insists that it has been shown that successful participation of the private doctor in this phase of syphilis control is practicable. Admittedly the purpose of Clark's investigations is to ensure early diagnosis and treatment when infection has occurred. The basic idea raised by Alexander and Schoch is the prophylactic treatment of all those exposed to infection. This is something that can only be described as an ideal. We cannot agree that the private practitioner should have anything to do with the discovery and examination of contacts; this would be the task of the public health officer. A private practitioner might use what influence he had to prevail on the patient to persuade his contacts to seek medical investigation and treatment. That the patient would be successful in this is very doubtful. The present provisions of the relevant Act of Parliament in New South Wales may be quoted. The patient's infection is notified by the medical attendant to the Department of Public Health, but no name is given. The patient is also instructed by the doctor that he must attend to receive continuous treatment. Should the patient fail to attend, the doctor is expected to notify the health authorities, who communicate with the patient and compel his attendance. It is only then that the health authority is empowered to trace the infection to its source. Readers will remember the discussions that took place in Great Britain during the recent war over what was known as Regulation 33B (see THE MEDICAL JOURNAL OF AUSTRALIA, October 9, 1943, page 299). Under this regulation, if a patient was found by a "special practitioner" (a local government venereal diseases practitioner or a medical venereal diseases officer of His Majesty's Forces) to be suffering from venereal disease, and gave information to the practitioner regarding a person whom he (the patient) suspected as the source of infection, the practitioner sent information about the suspected person to the medical officer of health. If the medical officer of health found that two patients had named the same person as the suspected source of infection, he could require this person, described in the regulation as the "contact", to submit to compulsory examination. If the contact was found to be suffering from venereal disease, he or she would be served with a "treatment notice" requiring submission to periodical examination and treatment until a "clearance certificate" could be given. If the contact was found not to be suffering from venereal disease the certificate of clearance was given at once. Regulation 33B may have been needed in war-time; whether anything of the kind is required in days of so-called peace would give rise to acute differences of opinion. The regulation makes it possible for many anomalies, difficulties and hardships to arise. It must suffice to state that, whatever a public medical officer of health may do, the private practitioner must take special care to see that no act of his will weaken the patient's feeling of safety and confidence—this is the very essence of the doctor-patient relationship. The more secure this relationship is, the more likely will the patient be to accept his doctor's direction and continue his treatment. In regard to the prophylactic treatment with penicillin, described, it must be remembered that the giving of this treatment is tantamount to an assumption that a syphilitic infection has taken place. The words of T. Rosenthal in the discussion on Alexander and Schoch's paper are therefore most significant: "A patient with syphilis requires a lifetime of observation on the part of the physician, while he himself has a lifetime of apprehension."

[1] *The American Journal of Medicine*, November, 1948.

Abstracts from Medical Literature.

SURGERY.

Fat Embolism.

F. R. DENMAN AND L. GRAGG (*Archives of Surgery*, September, 1948) state that fat embolism is far commoner than is generally realized. In a small autopsy series, they found seven cases in which the disease was not diagnosed clinically or pathologically until examination of frozen sections with fat stains was carried out. In most cases a diagnosis of pulmonary œdema or bronchopneumonia had been made. The authors state that clinicians must become fat-embolism conscious, particularly in relation to injured patients, and means must be found for confirmation of their bedside suspicions. The dark-field examination and the urine "sizzle" test seem to offer the most promise; both methods need further evaluation. Until diagnosis becomes reliable no rational plan of active therapy can be formulated.

Indications for Splenectomy.

F. H. LAHEY AND J. W. NORCROSS (*Annals of Surgery*, September, 1948) divide the indications for splenectomy into three different groups. The first is the removal of the spleen for conditions directly related to that organ itself, such as tumours, ptosis, rupture or cyst, to increase the radicalness in total gastrectomy and to aid exposure in operations on the left upper quadrant of the abdomen. Secondly, there are those states which are related to the splenic effects upon the peripheral blood cells or upon bone marrow and the production of red and white blood corpuscles as well as platelets. In the third division the indications for splenectomy are less well established in terms of lasting benefit from it, such as early cases of congestive splenomegaly and splenomegaly of unknown origin. The authors discuss the complications of splenectomy and technical considerations.

The Diagnosis of Small Bowel Obstruction.

C. J. HUNT (*Archives of Surgery*, October, 1948) states that the "big three" among symptoms and signs of small bowel obstruction are pain, peristalsis and borborygmus. The pain is peculiar, being generalized and diffuse, and not associated with tenderness or spasm. It is intermittent; starting as cramps it rises to a climax and then subsides, to recur rapidly. No other type of abdominal pain has this characteristic diffuseness, periodicity and relative absence of signs detectable on physical examination. Localized tenderness or spasm may be present in association with strangulation or adhesive bands attached to the anterior abdominal wall. The occurrence of borborygmus with pain is distinctive of obstruction. It is not commonly found in other forms of colic. Vomiting is of significance when it occurs with abdominal colic. At the onset it is reflex and not regurgitant. Early regurgitant vomiting occurs only with high bowel obstruction. The passage of gas or the evacuation of the bowels, either spontaneously or as a result of enemata, may give a false impression of patency of the bowel. The distension associated with simple obstruction is symmetrical, whereas with strangulation it is localized. In this important differentiation between simple obstruction and strangulation an accurate assessment can usually be made by means of a radiogram of the abdomen. With simple obstruction the proximal part of the bowel distends coil by coil, gradually assuming a transverse pattern, and the *valvulæ conniventes* become visible. With strangulation the distended loop has no definite pattern; it is darker and the *valvulæ conniventes* are seen poorly, if at all. With ileus there is uniform distension of the whole gut; the small gut assumes a transverse pattern framed by the distended large gut.

Glomus Tumours.

K. E. LEMMER (*Archives of Surgery*, October, 1948) states that glomus tumours are rarely correctly diagnosed. The small subcutaneous nodules, bluish or purple in colour, occurring under the nail or elsewhere, are often diagnosed in error as neuromata, fibromata or neurofibromata. They are usually painful; the pain radiates peripherally and is influenced by changes in temperature, position and pressure; 20% are not painful. They contain vascular, nervous and epithelioid elements. There is an afferent arteriole, which opens by a tortuous anastomotic vessel (the Sucquet-Hoyer canal) directly into a primary collecting vein. The anastomotic vessel is lined by endothelium and surrounded by longitudinal and circular muscle fibres, among which are the epithelioid glomal cells with their oval or globular nuclei. The whole is bound into a node one millimetre in diameter by a delicate collagenous reticulum, in which run fine non-myelinated nerve fibres. They probably play a large role in the control of body temperature. The tumours are almost always benign, are often multiple and are sometimes familial. They should be removed under local anæsthesia after their situation has been accurately localized.

Lesions of Patellar Cartilage as a Cause of Internal Derangements of the Knee.

C. W. PEABODY AND F. P. WALSH (*Archives of Surgery*, October, 1948) state that in order of frequency the causes of internal derangement of the knee are traumatic meniscal lesions, chondropathy of the patella, *osteochondritis dissecans*, simple loose body, recurrent dislocation of the patella, ligamentous instability, degenerative lesions of the meniscus, ununited fracture of the tibial eminence, hypertrophied synovial villi and osteochondromatosis. Chondropathy of the patella was the essential lesion in 20% of cases of arthrotomy performed at the service hospitals attended. It is regarded as responsible for an even higher percentage of civilian knee disabilities. There are three varieties: (i) congenital chondromalacia, which is manifest in the second and third decades, imperfect cell differentiation leading to softening and degeneration with soft "plushy" cartilage; (ii) post-traumatic chondritis, which is usually seen in the third and fourth decades and is due to an unhealed crush or fracture of cartilage with spreading fibrillary degeneration; (iii) presenescent chondrosis, which is seen in the fourth to the sixth decade and is a precocious change in the patella, independent of any inflammatory lesion. The symptoms of chondropathy are a sensation of squeaking or crackling, "catching", insecurity and "giving way", intermittent effusion, pain on kneeling, and stiffness and lameness on getting to the feet. The signs are crepitation and/or pain elicited by pressure over the patella or moving of the patella on the femur. The complications that may ensue are atrophy and weakness of the quadriceps, chronic synovitis, laxity of the joint and secondary generalized degenerative arthrosis, the formation of loose bodies from the detachment of pieces of the patellar cartilage, and traumatic secondary attritional erosion of the condylar articular surfaces. The treatment in the milder cases is palliative—restriction of use, with absolute rest if there is much joint reaction. In other cases it is surgical. For chondromalacia the cartilage is pared from the patella with a scalpel, one-sixteenth of an inch of the basal layer being left. For traumatic chondritis, if the patient's age is below the fourth decade the facet should be shaved; if the patient is over this age patellectomy is indicated. For presenescent chondrosis patellectomy is required.

Lymphatic Spread of Carcinoma of the Breast.

C. W. MONROE (*Archives of Surgery*, October, 1948) states that in the exhaustive examination of 87 breasts removed in cases in which operative cure was regarded as possible, 64·4% were found to have involvement of the axillary lymph glands, and of these 18% had but one gland involved. There was often by-passing of lymph glands in the spread of the disease. The number of lymph glands per specimen ranged from 3 to 70. The number varied with the surgeon, and the prognosis varied with the number of the glands present; if less than 30 glands were removed, 28% of patients were free from disease for five years; if 50 or more were removed, 66% of patients were free for five years. The largest number of lymph glands were secured when the medial half of the clavicular head of the *pectoralis major* was removed; the dissection was extended under the clavicle over the vessels and the brachial plexus, and the whole block of tissue was removed laterally in one piece.

Tuberculosis of the Cervical Lymph Glands.

C. W. LESTER (*Surgery, Gynecology and Obstetrics*, December, 1948) considers that there has been a reduction in the incidence of tuberculosis of the cervical lymph glands from about 1920. Three changes have occurred which may have affected this incidence: first, the elimination of tuberculosis in dairy hands, which removed bovine tuberculosis as a factor; second, the widespread removal of tonsils and the replacement of the guillotine operation by enucleation of the tonsils, which removed an important entry not only for tuberculosis but also for pyogenic infections which lessen the resistance of the glands to tuberculosis; third, the great decrease in tuberculosis generally, which has vastly diminished the chances for exposure. As so few cases are encountered a concept has grown up that surgical treatment of tuberculous cervical adenitis is ineffectual and disfiguring; all other methods are tried

first, and the surgeon is called on only when a cold abscess is about to rupture. This conception is wrong, as surgical treatment still produces the best results in properly selected cases. The diagnosis is not difficult and in the exudative phase of the disease, with tender glands, bed rest and supportive treatment are ordered. X-ray therapy has had a wide vogue, but its indications are restricted to early cases before caseation has occurred and to those in which cold abscesses drain through chronic sinuses. The author used streptomycin in twelve cases and indicates its sphere of usefulness. The drug appears to be most effective in the acute exudative phase of tuberculosis and of scant value, or of none at all, in the caseous and fibrotic phases of the disease. Its use is advocated only as a prophylactic measure with surgery to prevent spread or activation of the disease elsewhere. The daily dose advocated is ten milligrammes per pound of body weight, up to one gramme given in four divided doses. It is started the day before operation and discontinued not later than two weeks after operation. Some detail of the anatomy of the part and of the method of excision is given.

Surgical Anatomy of the Anal Canal.

J. E. DUNPHY (*Archives of Surgery*, December, 1948) states that the description of the surgical anatomy of the anal canal in current text-books on surgery and proctology are remarkably diverse. Not only are there departures in terminology, but in many instances details of considerable surgical significance are omitted. Particularly, the relationship of the four muscles, the external sphincter, the internal sphincter, the longitudinal muscle and the *levator ani*, are misrepresented. The author gives a detailed anatomical description of these muscles in their various parts and the relationship to each other. He points out that while the *levator ani* supports the anus posteriorly and laterally, anteriorly there is comparative weakness. This, however, is compensated for by the deep portion of the external sphincter. The importance of muscle relationship is stressed in regard to the track taken by, and the surgical treatment for, anal fistulæ. The author states that the subcutaneous and superficial portions of the external sphincter muscle can always be divided with impunity, provided that the deep portion of the muscle is left intact. Posteriorly and laterally, the deep portion of the external sphincter can be divided also, because the *levator ani* provides sufficient support to prevent incontinence.

Sliding Inguinal Hernia of the Colon.

R. K. BROWN (*Surgery, Gynecology and Obstetrics*, April, 1949) defines a sliding hernia as one in which part of the sac is formed by the serosa of the contained viscus. He states that the colon in a sliding hernia has an adventitious surface which is not covered by any peritoneum, either visceral or parietal. The diagnosis of the sliding nature of a hernia may be suspected clinically, as it is not well retained in a truss and there is little, if any, constriction of the hernial mass at the inguinal rings. However, exact diagnosis, usually, is not made prior to operation. The surgical treatment can be dangerous if the surgeon does not understand the true nature of the lesion. The author advises that repair of the inguinal canal be made after reduction of the hernia by traction on the bowel from above through a separate opening into the peritoneal cavity. This he does through the hernia incision by retracting the upper leaf of the external oblique aponeurosis and separating the internal oblique and transversus muscles in the direction of their fibres. After repair of the posterior wall of the inguinal canal, the rent in the lateral leaf of the mesocolon is closed through the upper incision. This opening is made when the peritoneum forms the fundus of the hernial sac.

Glomus Tumour within Bone.

W. LEHMAN AND C. KRAISSL (*Surgery*, January, 1949) report two cases of glomus tumour in bone, both within terminal phalanges of the fingers. They state that since Masson's original description of the glomus (neuro-myo-arterial) tumour, a good number of these tumours have been described, principally in the fingers, but occasionally in the leg, arm, ankle and elsewhere. However, only one other case of an intraosseous tumour was noted in the literature. The authors cured both of their patients by simple curettage of the tumour. In both instances the diagnosis was suspected because of the symptoms, pain and tenderness and from the X-ray pictures.

The Management of Massive Gastro-Duodenal Hæmorrhage.

F. H. AMENDOLA (*Annals of Surgery*, January, 1949) describes massive hæmorrhage as a rapid loss of blood of such proportions as to cause unmistakable hæmorrhage shock, and states that 85% of instances of such hæmorrhage are due to gastric, duodenal and anastomotic ulcers, a fatal type of hæmorrhage usually originating in a posterior penetrating duodenal ulcer or a penetrating ulcer of the lesser curvature of the stomach. Massive hæmorrhage is invariably arterial in origin and follows erosion of vessels of large calibre. The immediate effect of a rapid diminution of blood volume and hypotension may be acute circulatory failure or acute forward failure of the heart. Prolonged hypotension with qualitative as well as quantitative alterations in the circulating blood will produce changes of a serious nature in all the vital organs. The author indicates a plan of management based on certain beliefs including the following points. (i) Indiscriminate surgery for ulcer hæmorrhage is to be condemned and in all cases with a few exceptions a preliminary trial should be made of restorative measures and expectant treatment. (ii) Despite the impressive reduction in mortality in recent years, a certain percentage of patients will continue to die of uncontrollable ulcer hæmorrhage. (iii) The risk of fatal hæmorrhage in younger patients is small, but all serious "bleeders" above the age of forty-five years are potential candidates for emergency operation and should be seen by physician and surgeon jointly from the moment of admission to hospital. (iv) Severe ulcer pain preceding hæmorrhage or persisting after hæmorrhage is a serious symptom, indicating deep penetration. (v) The presence of pyloric stenosis is an indication for surgical interference, as hæmorrhage is likely to continue. (vi) Surgical interference, when indicated, carries the least risk during the first forty-eight hours of hæmorrhage. (vii) Continued hæmorrhage in the older age group may be considered of lethal proportions if the patient's blood pressure does not rise satisfactorily with repeated transfusions in the first twenty-four hours. (viii) In the older age group recurrent severe bleeding in a patient just recovered from a previous episode is of the greatest prognostic importance.

Subphrenic Abscess.

P. C. SHEA, JUNIOR, AND W. D. HOLDEN (*Archives of Surgery*, December, 1948) report forty cases of subphrenic abscess over a period of twelve years; diagnosis was confirmed by autopsy, operation or aspiration. They quote from a review of 3322 cases by Ochsner and Graves in 1933. In discussing signs and symptoms, they consider that diagnosis is not difficult, and stress the importance of persistent fever, leucocytosis, local pain and tenderness, and an elevated and fixed diaphragm. Fixation of the elevated diaphragm, seen by means of fluoroscopy, is considered a very useful sign. The treatment of choice is retroperitoneal drainage combined with penicillin alone or penicillin and sulphadiazine. Their over-all mortality rate was 50%; this figure includes ten patients (or 25%) who were not given surgical treatment either because of failure to make a diagnosis or because permission to operate was refused. Although a rare complication of intraperitoneal suppuration, subphrenic abscess is attended by a high death rate.

Fibrin Foam and Thrombin Solution.

D. STATE (*Archives of Surgery*, March, 1949) traces the history of the search for hæmostatic agents for venous and capillary ooze since Cushing used striated muscle in 1911. The author has used fibrin foam and thrombin solution in 42 cases, most frequently in controlling the ooze in the gall-bladder fossa after cholycystectomy. In one case, exploration of the common bile duct two months after cholecystectomy was necessary, and then no discernible residual portion of the fibrin foam was seen. In a patient with a bleeding duodenal ulcer, the hæmorrhage ceased coincidently with the administration of human fibrin into the stomach through a nasal tube. The author concludes that the use of fibrin foam and thrombin solution is a valuable addition to the methods of hæmostasis already available to the surgeon.

The Rapid Disinfection of Clean, Unwashed Skin.

A. D. GARDNER AND E. VINCENT (*The Lancet*, November 13, 1948) have made experiments to determine whether various chemical substances in common use for the purpose really have the power rapidly to disinfect the skin. It was found that a 2% solution of iodine in 70% ethyl alcohol is effective in thirty seconds or less when painted on flat areas of unwashed skin; if a full thirty seconds are allowed the solution of iodine may be reduced to 0·5%. Solutions of 30% "Zephiran" or 10% cetrimide ("Cetavlon") in 70% ethyl alcohol are effective in thirty to forty-five seconds. Ethyl ether, "Chloros", various mercurial preparations and some other substances, including "Dettol", petrol, acetone, brilliant green and crystal violet, have either a slower or an otherwise imperfect disinfecting power.

Medical Societies.

THE AUSTRALASIAN ASSOCIATION OF PSYCHIATRISTS.

A GENERAL MEETING of the Australasian Association of Psychiatrists was held in October, 1948, at Melbourne.

Post-Graduate Training in Psychiatry.

DR. F. W. GRAHAM read a paper entitled "Post-Graduate Training in Psychiatry" (see page 121).

DR. A. R. PHILLIPS said that Dr. Graham in his paper had made out a case for training in psychotherapy so effectively that there was nothing much to add to it, and he could ask the visiting members to forgive him if he confined his remarks to the local scene.

At the meeting on the previous day it had been evident from the nature of the discussion—on the relationship between clinical psychologists and psychiatrists—that a certain tension existed as well as a great deal of goodwill on both sides. Such tensions as still existed were due to the mutual defensiveness of both sides, and should disappear if both were thoroughly well trained in their own disciplines. It seemed highly probable that the Psychology School of the University of Melbourne would in fact turn out highly qualified and well-trained psychologists. Could the same be said for psychiatrists? Dr. Phillips thought not; he thought that the psychiatrists would have to pay a great deal of attention to the matter in the near future. Fortunately a start had already been made, but development so far had not gone far enough. Ten years earlier the outlook for a young psychiatrist in search of instruction had been very bleak indeed. Except for an occasional meeting of the Section for Neurology and Psychiatry of the Victorian Branch of the British Medical Association, there was absolutely nothing. Groups such as the British Psychological Society and the Rorschach Society were now meeting regularly, but they were essentially psychological societies, although some psychiatrists were members and attended regularly. There were also the Institute for Psycho-analysis and the Clinic for Psycho-therapy, but except for the Australasian psychiatrists' newly formed association, there had been no organization among psychiatrists as a whole. Dr. Phillips asked leave to refer briefly to undergraduate training, the organization of which must have a bearing on post-graduate activities. Although the number of lectures at present was small, the training so far as it went was good, because Dr. John K. Adey was the lecturer. He (Dr. Phillips) would always be grateful for the clinical instruction given by Dr. Adey when he was a member of the staff of the Receiving House, and no doubt many others felt the same. Dr. Phillips suggested that the Australasian Association of Psychiatrists should take some steps to see that the clinical training at the Receiving House was kept at an adequately high level, in view of the fact that Dr. Adey would be retiring in a few years. When he (Dr. Phillips) was an undergraduate, the lectures in psychiatry had been deplorable, and any post-graduate training was largely home-made. The association should assure itself that the teaching in psychiatry would not necessarily fall by chance to any medical officer who happened to become medical superintendent at the Receiving House because of effluxion of time, and that should be done at present when the control of the Mental Hygiene Department was about to be reorganized.

Returning to post-graduate training, Dr. Phillips said that he would refer to the course for the diploma of psychological medicine, as he was one of the rather weather-beaten group of psychiatrists who had taken the first course for that diploma after having waited a good many years for its establishment. As it was then, the diploma offered what he thought was a satisfactory course in neuro-anatomy, neuro-physiology and neuro-pathology, as one would expect from the University of Melbourne Medical School. The course in clinical neurology was also satisfying, and that was to be expected, too, as Melbourne had some neurologists of world class with international reputations. He was sure that all would admit that they had no psychiatrists in that class. There was some instruction in clinical psychiatry, but practically nothing that could be called psychopathology; and the diploma, in spite of its name, really had nothing to do with psychological medicine, but might have been a good basic course in neurology. That was to say that the candidates left off at about the point where a future specialist in neurology would make a beginning. Since that time the course undoubtedly had been greatly improved by requiring the candidates to take the course for psychology part I and psychopathology or their equivalents. It was unfortunate that the only instruction in psychological medicine as distinguished from clinical psychiatry in its more physical aspects was given, not in the medical school, but in the psychology school, even though most of the teaching in psychopathology was done by medical men. Dr. Phillips's criticism was not directed at the fact that some of the work was done in the psychology school—that was most desirable—but that the medical school was playing no part at all in the teaching of psychological medicine in the true sense of the term. The diploma of psychological medicine was all right so far as it went, and one would not expect it to provide the training in psychotherapy; but after the diploma of psychological medicine, what? Training in psycho-therapy was being given at the Institute for Psycho-analysis, and he understood that something of the sort was available at the Clinic for Psycho-therapy. Some people had already completed didactic analyses at the Psycho-analytical Institute, others were in training, and some were waiting their turn. A number of the younger generation of psychiatrists wished to do psychotherapy and were seeking the training of their own accord. Dr. Phillips felt that the Australasian Association of Psychiatrists should play some part in the organization of adequate training in psycho-therapy. As one of the "middle group" of psychiatrists, in respect of age, he had seen something both of the early difficulties and of the growth of the present facilities, and he would like to see something done on behalf of the younger group who were now coming forward.

DR. ALAN STOLLER said that he heartily endorsed Dr. Phillips's remarks with regard to the need to increase the amount of psychotherapy in the training of psychiatrists. He also stressed how essential it was to lay emphasis on the psychiatric team in any such programme. It would be a sheer physical impossibility to provide a personal analysis for all new trainees, nor was that preparation necessary for more than a fraction of their psychiatric cases. Their case-load was too heavy, and the clinical value (as distinct from the research value) of psycho-analysis was yet too uncertain for them to insist on that procedure for all psychiatrists. They should aim at giving a good basic training, and the subsequent orientation and interest of the psychiatrist would determine whether or not he became analysed. Whatever arrangements they might make in Australia for training, they should insist on overseas experience; it was necessary to broaden the outlook of their recent trainees and at the same time keep Australia abreast of world developments. Both the United States of America and Great Britain had expensive training schemes in operation, the former's mainly being instigated by the Veterans Administration. At the Winter Veterans' Hospital, Topeka, Kansas, there were no fewer than 100 trainees under the Veterans' Rehabilitation Programme; the course was of three years, and after a further two years' residency in a mental hospital, trainees were allowed to sit for their "Boards" (neurology and psychiatry). The course in Great Britain was of three years and included six months' child guidance.

The International Congress on Mental Health.

DR. ALAN STOLLER read a paper entitled "The International Congress on Mental Health" (see page 124).

Group Therapy.

DR. PAUL G. DANE read a paper entitled "Observations upon Group Therapy" (see page 127).

DR. ALAN STOLLER said that one must not lose sight of the fact that group psychotherapy was as yet in an experimental stage and no scientific validation had been forthcoming. He had, in his possession, the preliminary report of the investigation which Dr. Dane saw in operation, and the conclusions therein were very tentative; the evaluation was as yet subjective. It had to be remembered that there was such a thing as a self-limited psychiatric disorder, and that improvements occurred in many cases in the course of time, irrespective of any therapy. Any patient in a group setting might be said to be undergoing group therapy, whether it was in the small dynamic-analytical groups, in psychodrama, in physical training classes, or in eurythmic groups. Group therapy was important from the point of view of socialization—the reduction of the isolationism of the neurotic; one awaited with interest the unearthing of specific psychodynamisms, but as yet there was no predictability of outcome according to those which had been described. There appeared to be definite improvement in some cases, but cure could not be claimed. The main value, then, was to produce some improvement which would be part of a total over-all programme of therapy, or to unearth certain mechanisms which would provide leads for individual

psychotherapy. Dr. Stoller had seen a group of schizophrenics in action in the United States of America and had been impressed by the teaching value of such a conglomeration; he was not very impressed by results.

Post-Graduate Work.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

WEEK-END COURSES.

Week-End Course in Pulmonary Tuberculosis.

THE Post-Graduate Committee in Medicine in the University of Sydney will conduct a week-end course in pulmonary tuberculosis on Saturday and Sunday, September 10 and 11, 1949. The course will begin at 2 p.m. on the Saturday afternoon and will be held at the chest clinics of the Royal North Shore Hospital, the Repatriation General Hospital, Concord, and the Royal Prince Alfred Hospital, Camperdown, where lectures and practical demonstrations will be given by members of the staffs of the hospitals. The course will be designed both for general practitioners and for specialists. It will cover the epidemiology and medical and surgical management of pulmonary tuberculosis, with particular emphasis on modern methods of diagnosis and treatment. Early application is necessary. Further particulars may be obtained from the Course Secretary, the Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney (telephones: BW 7483, BU 5238).

Week-End Course at Wollongong.

A post-graduate week-end course will be held at Wollongong in conjunction with the clinical society of the South-Eastern Medical Association, on Saturday afternoon and Sunday, July 30 and 31, 1949. Dr. Lorimer Dods will speak on "Pædiatric Problems", Dr. John McGeorge on "Medico-Legal Aspects of Psychiatry", Dr. B. T. Edye on "Surgical Dyspepsias" and "Tumours of the Breast", and Dr. T. Dixon Hughes on "Modern Trends of Obstetrics with Special Reference to the Rh Factor". The fee for the course will be £2 2s. Those wishing to attend are requested to notify Dr. Rawdon T. Suttor, Honorary Secretary, Clinical Society of the South-Eastern Medical Association, 60 Kembla Street, Wollongong, as soon as possible.

Week-End Course at Lismore.

A post-graduate course will be held at Lismore in conjunction with the North-Eastern Medical Association on Saturday and Sunday, August 6 and 7, 1949. On Saturday morning a clinical meeting will be held at the Lismore Base Hospital, and on Saturday afternoon and Sunday Dr. Lorimer Dods will speak on "Recent Advances in Pædiatric Concepts and Therapeutics" and "The Treatment of Dehydration in Pædiatric Practice", and Dr. T. Y. Nelson will speak on "Bronchiectasis in Children", "Surgical Problems in the Neonatal Period" and "Recent Advances in Surgical Problems in Childhood". There will be a session for questions. The fee for attendance at the course will be £2 2s. Those wishing to attend are requested to notify Dr. Nugent Brand, Honorary Secretary, North-Eastern Medical Association, 39 Conway Street, Lismore, as early as possible.

EXAMINATION RESULTS.

The Post-Graduate Committee in Medicine in the University of Sydney announces that the following candidates have passed in the examinations for the degrees and diplomas mentioned:

Master of Surgery, Part I.—J. A. Bond, T. R. M. Furber, W. L. H. Keller, C. C. McKellar, A. W. Middleton, R. C. Opie, T. F. Rose, T. J. Thwaite, L. D. Wheeler.

Diploma in Anæsthesia.—F. Leventhal, R. B. Speirs.

Diploma in Dermatological Medicine, Part I.—Lorna A. Archibald, M. Farb, A. G. Finley, P. A. Foley, W. W. Gunther, M. T. Havyatt, O. E. Nothling.

Diploma in Dermatological Medicine, Part II.—Lorna A. Archibald, J. B. Cahill, A. G. Finley, W. W. Gunther, M. T. Havyatt, S. S. Marshall, O. E. Nothling, F. G. Trevor Turner.

Diploma in Gynæcology and Obstetrics, Part I.—Lois E. Benson, Helen E. Thomson.

Diploma in Gynæcology and Obstetrics, Part II.—F. P. Pigott.

Diploma in Laryngology and Oto-Rhinology, Part I.—T. H. O'Donnell, A. Revai.

Diploma in Ophthalmology, Part I.—C. H. Baker, J. H. Broadbent, G. C. T. Burfitt-Williams, E. J. Velvin.

Diploma in Ophthalmology, Part II.—J. H. Broadbent, M. C. Moore, P. A. Rogers, E. J. Velvin.

Diploma in Clinical Pathology.—B. J. Basil-Jones, L. F. Dobson. Part only in accordance with Regulation 2: E. Hirst (Pathological Anatomy and Hæmatology), T. D. Orban (Biochemistry).

Diploma in Psychological Medicine, Part I.—S. Benedek, A. T. Clements, L. J. Jones, D. R. Morgan.

Diploma in Psychological Medicine, Part II.—H. J. Prior, I. G. Simpson.

Diploma in Diagnostic Radiology, Part I.—E. R. Blakeley, E. A. Booth, L. C. Doubleday, C. A. Horn, P. H. Hume, P. S. Larbalestier, M. D. Owen.

Diploma in Diagnostic Radiology, Part II.—E. R. Blakeley, E. A. Booth, A. E. Diethelm, L. C. Doubleday, F. M. Hooper, C. A. Horn, R. M. de Lambert, M. D. Owen.

Diploma in Therapeutic Radiology, Part I.—J. C. Binns.

Correspondence.

POSTURE IN DISEASE OF THE CHEST.

SIR: At the end of last century the medical student could always recognize that a new patient suffered from pneumonia by three "clinical" signs: (i) he was propped up in bed; (ii) the head of his bed was enclosed in a "bed tent"; (iii) a four-hourly chart hung by his side.

The four-hourly chart persists. Of the other two, the bed tent went first; it was constructed of sheets hung over the top, back and sides of the head of the bed, so as to keep off all "dangerous draughts", from which the patient might have "caught cold", and leaving only the front open; even if oxygen were administered the bed tent was retained.

It was thought that by supporting the patient's back firmly with pillows his heart might be spared some strain. I can remember at a later date how shocked were some resident medical officers and many old-fashioned hospital sisters when I insisted that sufferers from pneumonia, adult and infant, should be encouraged to lie as flat as was comfortable for them.

In THE MEDICAL JOURNAL OF AUSTRALIA of June 18, 1949, page 804, Dr. Bedford Elwell in a very able and interesting paper describes the continuous reverse posture (head and shoulders lower than hips) not only for all forms of "bronchitis" (including bronchiectasis), but also for acute pneumonia. This is a big and, as it may appear to some, a venturesome step; yet he supports it by argument and example so as to make out a good case for cautious trial, if not for immediate adoption. The photographic illustrations both clinical and anatomical are excellent, though curiously enough he does not refer to the diagrams of J. Hardie Neil which adorned THE MEDICAL JOURNAL OF AUSTRALIA some years ago.

Yours, etc.,
GUY GRIFFITHS, M.D.

Sydney,
July 7, 1949.

PSYCHIATRIC PATIENTS IN GENERAL WARDS.

SIR: Speaking from experience of the treatment in both general and special wards of patients whose disorders are primarily emotional and who have been placed directly under the care of a psychiatrist, I would mention the following main arguments against treatment in general wards: (i) the need for extreme care in selection of cases and the greater risk of suicidal attempts in open wards, even though convulsion therapy may reduce this risk; (ii) the difficulty of establishing a sufficiently comprehensive regimen of physical exercises and occupational therapy for ambulant patients, who constitute the majority of the psychiatric cases likely to be handled in a general hospital; (iii) considerations of convenience, the application of special techniques and routines and the need for at least some specially experienced and interested nursing staff—considerations which have led to the establishment of other special wards in general hospitals; (iv) the likelihood that some psychoneurotics may contract harmful instead of beneficial influences by association with the physically sick.

Special wards, protected with blocked windows and without easy means of escape, or better still, an annexe provided with a few single rooms, will permit of the treatment of a greater variety of psychiatric cases, including patients who

have become delirious or otherwise disturbed or disturbing to others in the medical and surgical wards.

In a general hospital with beds allotted to a psychiatrist many general physicians will still wish to keep patients with, say, nervous anorexia and exhaustion, conversion hysteria, neurosyphilis or delirium in their wards under their care, with or without the advice of a psychiatrist as regards treatment.

If the patient understands that he has to undergo special treatment he rarely objects to being admitted or transferred to a psychiatric section. One more often hears an objection to being sent to an independent psychiatric institution rather than to the special section of a general hospital. After special treatment is completed the patient should return to the general wards before discharge, but this is not always feasible, even though he has recovered.

Every general hospital with a psychiatric out-patient department should have a few beds (say two per hundred general beds) under the control of the honorary psychiatrist, who will usually ask for a special ward as his work develops. The arguments advanced by Dr. Carson and Dr. Kitching for retaining selected psychiatric patients in a general ward certainly merit close consideration, especially from the point of view of teaching and propaganda, provided that nursing, resident and honorary staff have time to learn. There is no reason, however, why both systems should not operate, and in hospitals which have special psychiatric wards some psychiatric cases are retained in the general wards under the care of general physicians.

The treatment of selected psychiatric cases in general nursing homes is, of course, no novelty.

Yours, etc.,
W. S. DAWSON.

Sydney,
July 11, 1949.

ACCIDENTAL AIR EMBOLISM IN A BLOOD DONOR.

SIR: Dr. Kelly, in the journal of July 9, records another case of air embolism in a blood donor due to blockage of the air outlet tube of the blood bottle, with consequent building up of air pressure in the bottle.

To the cases he mentions I can add two, one actual and one potential, both due to the use of apparatus in which the blood delivery tube did not project far enough through the bung, so that blood ran along the under surface of the bung, entered the air outlet tube, and saturated the cotton-wool filter therein. In one case (not my own) the donor received an estimated 80 cubic centimetres of air when the venous tourniquet was released, with alarming, though fortunately not serious, results. The other case alarmed me more than the donor. I was just in time to prevent a nurse from releasing the tourniquet on a donor from whom the blood had unaccountably stopped. When the needle was removed from the vein a jet of air shot from it.

This type of accident is easily preventible by the following rule, which should be known to all assistants at a blood donation. When the flow of blood stops for no apparent reason, always clip the blood delivery tube before releasing the tourniquet. The objection that this might lead to subcutaneous extravasation of blood is not supported by experience.

Yours, etc.,
W. T. AGAR.

Department of Physiology,
The University of Melbourne,
Melbourne.
July 11, 1949.

DRIVING "UNDER THE INFLUENCE".

SIR: Doctors are often taxed by magistrates with wasting the court's time in the giving of their evidence. Could this be due to the prevailing confusion in the interpretation of the term "under the influence"?

A morphine addict, given a hypodermic injection of one-quarter of a grain of morphine, will, in all probability, show no effect at all. This cannot be said of a normal person. Nor could the addict rightly be described as being "under the influence" of morphine if the dose is not sufficient to affect his behaviour.

Am I right in presuming that the same conclusions may be drawn in regard to alcohol?

The medical witness frequently finds himself making such statements as "In my opinion the accused was intoxicated" or "the accused was perfectly sober". Thus he calls down upon himself the magistrate's wrath.

Apparently, in the eyes of the law, the consumption of liquor, no matter how small a quantity, at once places the thirsty motorist "under the influence". The policeman smells his breath. The driver admits to drinking. Then why bring the doctor into it at all.

The fact is that, much as we all deplore intoxicated drivers, there are nevertheless numerous cases where the charge is unjust. Such persons deserve every protection and their call upon a doctor is a just call.

So the doctor becomes involved. Is it not then logical for him to assume that he is called upon to decide if the person is drunk or sober? Is it not also logical to concede that the term "under the influence" should mean "drunk", nothing more nor less? And, in his summing up of the case, must he not take into consideration the person's capacity for drink? That is, if he is acquainted with the accused, which is usually the case. For we know that a susceptible person absorbs his alcohol more rapidly than a more resistant or habituated individual. Surely this factor deserves first consideration.

In certain States of America the recommendations of the National Safety Council and the American Medical Association provide the answer by means of chemical tests. One of the rulings embodied in their statutes is as follows:

> Where there is 0·15 per cent. or more of alcohol in the blood, or equivalent amounts in other body fluids or breath, the subject is presumed to be under the influence of alcohol as far as the operation of a motor vehicle is concerned.

In the absence of chemical tests, surely the same logical reasoning may be applied, giving due deference to the examining doctor for clinical ability in applying his tests and drawing his conclusions.

Might I make a plea for a better understanding between the bench and the witness stand, to the exclusion of unnecessary wrangling over mere phraseology?

Yours, etc.,
BEN. C. EGLITZKY.

St. Marys,
New South Wales,
July 12, 1949.

Reference.

Levinson, Samuel A., "Medicolegal Problems".

The Royal College of Obstetricians and Gynaecologists.

MEMBERSHIP EXAMINATION IN AUSTRALIA.

AN examination for membership of the Royal College of Obstetricians and Gynæcologists will be held in Australia between October 2 and 20, 1950. It is expected that the visiting examiner will be Sir William Gilliatt, Kt., C.V.O., M.D., M.S., F.R.C.P., F.R.C.S. (England), F.R.C.O.G., President of the College.

The last day for receipt of applications in England is January 1, 1950. The last day for receipt of case records in England is May 1, 1950. As applications have to be approved by the Regional Council in Australia before being forwarded to England, all applications must be received by the Honorary Secretary of the Regional Council in Australia by October 28, 1949.

Candidates are requested to make their initial inquiries and applications through the Honorary Secretary of the State Committee in the respective States.

Naval, Military and Air Force.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Numbers 47 and 49, of June 30 and July 7, 1949.

CITIZEN NAVAL FORCES OF THE COMMONWEALTH.

Royal Australian Naval Reserve.

Termination of Appointment.—The appointment of Ronald Keith Smyth as Surgeon Lieutenant is terminated, dated 14th April, 1949.

ROYAL AUSTRALIAN AIR FORCE.

Permanent Air Force: Medical Branch.

The resignation of Flight Lieutenant B. S. Woods (297502) is accepted, 23rd June, 1949.

Citizen Air Force: Medical Branch.

The appointment of Temporary Squadron Leader J. E. Joseph (257661) is terminated on demobilization, 9th May, 1949.

Charles Roe (277273) is appointed to a commission with the rank of Flight Lieutenant, 1st March, 1949, for part-time duties.

Reserve: Medical Branch.

The appointment of Flight Lieutenant C. Roe (277273) is terminated, 28th February, 1949.

University Intelligence.

THE UNIVERSITY OF MELBOURNE.

ADVICE has been received from the Registrar of the University of Melbourne that the university elections to the council and standing committee of convocation will take place in December, 1949. Nominations will be invited in October and, according to statute, graduates who wish to vote will need to apply for voting papers. Application cards will be distributed by the university authorities to facilitate the applications.

Beattie Smith Memorial Lectures, 1949.

The Beattie Smith Memorial Lectures, endowed by a benefaction received by the University of Melbourne in 1922 under the will of the late Dr. William Beattie Smith, are to be delivered this year by H. F. Maudsley, M.C., M.D., B.S., D.P.M. (England), F.R.C.P., F.R.A.C.P., Consultant Psychiatrist to the Royal Melbourne Hospital, on Monday, August 15, and Monday, August 22, 1949, in the Anatomy Lecture Theatre, University of Melbourne. The subject of the lectures will be "Whither Psychiatry?". Professor P. MacCallum, Dean of the Faculty of Medicine, will preside at both lectures, which will begin at 8.15 p.m.

The Royal Australasian College of Physicians.

COURSE IN ADVANCED MEDICINE.

THE Victorian State Committee of The Royal Australasian College of Physicians is arranging a course in advanced medicine to be held at Prince Henry's Hospital, Melbourne, from August 23 to September 30, 1949, on Tuesdays, Thursdays and Fridays. The course will include ward rounds, lectures and demonstrations in special subjects. A detailed programme is available. Further information may be obtained from Dr. Eric Clarke, c.o. The Royal Australasian College of Surgeons, Spring Street, Melbourne, C.1.

Obituary.

CHARLES GORDON MacLEOD.

WE regret to announce the death of Dr. Charles Gordon MacLeod, which occurred on April 30, 1949, at Sydney.

GEOFFRIE CARTHEW BURSTON.

WE regret to announce the death of Dr. Geoffrie Carthew Burston, which occurred on July 2, 1949, at Toorak, Victoria.

DISEASES NOTIFIABLE IN EACH STATE AND TERRITORY OF AUSTRALIA AND NOTIFICATIONS FOR THE WEEK ENDED JULY 2, 1949.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.[2]	Australian Capital Territory.	Australia.[2]
Ankylostomiasis	*	..	1	..	*	..	..	..	1
Anthrax	*	..	..	..	..	..	..	..	..
Beriberi	*	*	*	*	*	*	..	*	..
Bilharziasis	*	..	..	..	..	..	..	..	..
Cerebro-spinal Meningitis	2	4	1	..	..	..	..	..	7
Cholera	..	..	..	..	..	..	..	..	..
Coastal Fever(*a*)	*	*	..	*	*	*	*	*	..
Dengue	*	*	*	*	*	*	..	*	..
Diarrhœa (Infantile)	..	..	3	..	2	..	..	..	5
Diphtheria	7	7	8	2	..	..	..	..	24
Dysentery(*b*)	*	..	..	..	1	..	..	..	1
Encephalitis Lethargica	..	..	..	..	..	..	..	..	..
Erysipelas	*	*	*	5	*	*	..	..	5
Filariasis	*	..	..	..	..	..	*	*	..
Helminthiasis	*	..	*	*	*	*	*	*	..
Hydatid	*	*	*	*	*	*	*	..	..
Influenza	*	*	*	..	*	*	..	*	..
Leprosy	..	..	..	..	..	..	..	..	..
Malaria(*c*)	*	(*c*)	7(*c*)	(*c*)	(*c*)	(*c*)	(*c*)	(*c*)	7(*c*)
Measles	*	*	*	127	*	*	..	..	127
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	1	9	..	..	..	..	..	..	10
Psittacosis	*	..	*	1	*	*	*	*	1
Puerperal Fever	..	..	..	2	..	..	..	..	2
Rubella	*	*	*	*	*	*	..	..	..
Scarlet Fever	23	19	11	13	2	4	..	..	72
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	*	..	..	*	*	*	*	*	..
Trachoma	*	..	*	*	*	*	*	*	..
Tuberculosis(*d*)	9	16	15	9	8	1	..	..	58
Typhoid Fever(*e*)	1	1	..	..	..	..	..	..	..
Typhus (Endemic)(*f*)	..	..	..	..	1	..	..	..	1
Undulant Fever	..	..	..	..	..	..	..	..	..
Weil's Disease(*g*)	*	*	..	*	*	*	*	*	..
Whooping Cough	*	*	*	18	*	*	..	..	18
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] The form of this table is taken from the *Official Year Book of the Commonwealth of Australia*, Number 36, 1944-1945.
[2] Figures not available.
[3] Figures incomplete owing to absence of returns from Northern Territory.
* Not notifiable.
(*a*) Includes "Mossman" and "Sarina" fevers. (*b*) Includes amœbic and bacillary. (*c*) Statistics inexact with varying practice with regard to relapses in Service cases infected overseas. (*d*) Includes all forms except in New South Wales and Northern Territory, where only pulmonary tuberculosis is notifiable. (*e*) Includes enteric fever and paratyphoid fevers. (*f*) Cases reported are all of the mild type known as Brill's disease or endemic typhus (including scrub and urban types). (*g*) Includes leptospiroses, Weil's and para-Weil's disease.

PETER MACARTHUR.

We regret to announce the death of Dr. Peter Macarthur, which occurred on July 7, 1949, at Milton, New South Wales.

Congresses.

SEVENTH CONGRESS OF THE INTERNATIONAL COLLEGE OF SURGEONS.

The Seventh Congress of the International College of Surgeons will be held in Buenos Ayres from August 6 to 12, 1950. A special section will deal with aspects of hydatid disease. Those interested should communicate with Dr. Alfredo Ferro, Lavalle 666, Azul, Argentine Republic.

Notice.

WILSON MEMORIAL FUND.

It has been decided to close the fund to establish a memorial to the late Professor J. T. Wilson. Those still wishing to subscribe may send donations to I. J. Hunter, New Medical School, University of Sydney.

	£	s.	d.
Previously acknowledged	145	6	0
Dr. W. H. Read	5	5	0
Dr. H. A. McCoy	3	3	0
Dr. Eleanor Bourne, Dr. R. C. Miller and Professor K. Inglis (each £2 2s.) ..	6	6	0
Dr. Walter Yum	1	2	0
Dr. Leslie Gardiner, Dr. M. J. Slattery, Dr. J. A. Murphy and Dr. F. Brown Craig (each £1 1s.)	4	4	0
Total	£165	6	0

The committee suggests that this sum be given to the University of Sydney and the interest therefrom donated to a Professor J. T. Wilson Memorial Prize of £5 to be given to the best student in anatomy at the second year examination in medicine.

S. E. JONES MEMORIAL FUND.

The following subscriptions to the S. E. Jones Memorial Fund have been received up to June 30, 1949.

	£	s.	d.
Previously acknowledged	261	18	0
Section of Neurology, Psychiatry and Neurosurgery, New South Wales ..	25	0	0
Dr. G. A. Ross	2	2	0
Total	£289	0	0

Cheques made payable to the S. E. Jones Memorial Fund may be sent to the Medical Secretary, New South Wales Branch of the British Medical Association, 135 Macquarie Street, Sydney. It is proposed to close this account in July, 1949.

Nominations and Elections.

The undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Haneman, Samuel, registered in accordance with the provisions of Section 17B of the *Medical Practitioners Act*, 1938-1945, 54 Warner's Avenue, Seven Ways, Bondi.

The undermentioned have been elected as members of the South Australian Branch of the British Medical Association:

Jose, Geoffrey Alan, M.B., B.S., 1948 (Univ. Adelaide), Royal Adelaide Hospital, Adelaide.

Cowling, Brian Deucalion, M.B., B.S., 1948 (Univ. Adelaide), Royal Adelaide Hospital, Adelaide.

Medical Appointments.

Dr. A. J. Splatt has been appointed senior resident medical officer, Department of Urology, Brisbane Hospital, Brisbane.

Diary for the Month.

JULY 26.—New South Wales Branch, B.M.A.: Ethics Committee.
JULY 27.—Victorian Branch, B.M.A.: Council Meeting.
JULY 28.—New South Wales Branch, B.M.A.: Branch Meeting.
AUG. 2.—New South Wales Branch, B.M.A.: Organization and Science Committee.
AUG. 3.—Victorian Branch, B.M.A.: Branch Meeting.
AUG. 3.—Western Australian Branch, B.M.A.: Council Meeting.
AUG. 4.—South Australian Branch, B.M.A.: Council Meeting.
AUG. 5.—Queensland Branch, B.M.A.: Branch Meeting.
AUG. 9.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
AUG. 11.—Victorian Branch, B.M.A.: Organization Subcommittee.
AUG. 12.—Queensland Branch, B.M.A.: Council Meeting.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135 Macquarie Street, Sydney): Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178 North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205 Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales (Telephones: MW 2651-2.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such notification is received within one month.

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